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Published monthly by the Arizona Medical Association, Inc. Business office at 801 N. 1st Street, Phoenix, Arizona. Subscription \$5 a year, single copy 50 cents. Entered as second class matter March 1, 1921, at Postoffice at Phoenix, Arizona, Act of March 3, 1879.

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ARIZONA MEDICINE

Journal of Arizona Medical Association

VOL. 16, NO. 4



APRIL, 1959

Original Articles

CARDIAC HYPERTROPHY—SOME REFLECTIONS*

By

Robert P. Grant, M.D.**
Bethesda, Md.

CARDIAC HYPERTROPHY enjoys the distinction of being one of the most common adaptations of the heart to disease, and at the same time one of the least studied and least understood of all aspects of heart disease. In the last decade, which has seen at least 10,000 papers published on various aspects of heart disease, there have not been 10 papers concerned with the nature of myocardial hypertrophy. The most obvious and pertinent questions regarding hypertrophy are still unanswered. The anatomist has not yet used the electron microscope to study the ultra-structure of the hypertrophied myocardial fiber, the biochemist has not yet examined whether the chemical constituents of hypertrophied fibres are the same as for normal fibers, the physiologist has not tested the strength and tension characteristics of hypertrophied myocardium, and the pharmacologist cannot tell us whether digitalis has the same effect on hypertrophied as on normal myocardium.

But basic research must often follow the leads given it by clinical practice. And the reason we know so little about myocardial hypertrophy is partly because we clinicians have not recognized until lately that it lends itself to experimentation and study. We have had the same intellectual block regarding hypertrophy that we had re-

garding atherosclerosis. For years, atherosclerosis and other aging mechanisms were viewed as "normal" and therefore not subjects for research. In the same way we have considered hypertrophy as a "normal" consequence of increased work, something that was "supposed to" take place and therefore not a fruitful subject for research. Now that we see atherosclerosis and aging as pathologic processes, vistas open up before us which have at their end the cure and control of many of the complications of life's chronology. I venture to say that the same is true of cardiac hypertrophy and that better understanding of the basic mechanisms of hypertrophy may well lead to concepts and pharmacologic techniques which will tremendously strengthen our methods for the treatment of heart disease.

Curiously enough, the largest body of information regarding muscular hypertrophy comes, not from physiologists, but from "body builders," the "Mr. America" aspirants whose goal is skeletal muscle hypertrophy. These are the only people who have seriously studied how to make a muscle big and there is much we can learn from them. Parenthetically, isn't it a curious paradox that we admire the big biceps and consider skeletal muscle hypertrophy as "good," and yet when the same tissue response takes place in the heart, producing cardiac enlargement, we view it as "bad." The body builder knows that

*Delivered at the Scientific Sessions of the Annual Meeting of the Greater Arizona Heart Association Meeting, Phoenix, Arizona, February 1958.

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to increase the girth of a muscle he must maximally load it for each contraction and that the frequency with which he contracts it is relatively unimportant. Usually he works in sets of 10 contractions for each muscle, and the serious aspirant often does these exercises no oftener than three times a week. This explains why weight lifters have larger leg muscles than runners. The latter are contracting their muscles more frequently, but they are never lifting more than their own body weight which has long since ceased to be a maximal load.

Loading vs. Rate

We know this from clinical medicine too, for we have all observed that the constant tremor of paralysis agitans never leads to hypertrophy of the muscles of the arm; the reason for this is that the contracting muscles are never loaded, either by weight or by simultaneous contraction of antagonistic muscles. For the same reason protracted tachycardia does not lead to cardiac hypertrophy. Among the reported cases of prolonged tachycardia those few which at autopsy showed increased heart weight invariably proved to have cellular infiltration and edema of myocarditis on microscopic examination, and no hypertrophy. When cardiac enlargement develops in the course of tachycardia, it is usually due to dilatation, not hypertrophy, and is an evidence of heart failure. When this takes place, it nearly always means that some additional, perhaps pre-existing, cardiac lesion is present, for the normal human heart can tolerate astonishingly rapid rates without difficulty or permanent damage. Rates over 200 per minute are often seen in normal subjects undergoing strenuous exertion, and there are a few reports of adults with ventricular rates of over 300 per minute due to paroxysmal atrial tachycardia which, when no other lesion was present, were well tolerated. So skeletal and cardiac muscle appears to have this in common: increased load leads to hypertrophy, but increased rate has little or no morphologic effect.

The calf muscles are the despair of the "body builder." They are the hardest to hypertrophy, and often this is what separates champion from the pretenders. Perhaps it is because, to maximally load the calf muscles, one must maximally load his shoulders and then rise on his toes. Perhaps this is too precarious an exercise for most body builders. However, it is also possible that

muscles vary in their capacity for hypertrophy. Whether cardiac muscle hypertrophies as readily as the biceps upon loading or, like the gastrocnemius, is slow to hypertrophy is not known. Indeed it is difficult to be sure what maximal loading is for heart muscle. Certainly any resistance to systolic ejection will represent "loading" and that is why the most marked cardiac hypertrophies are encountered in aortic stenosis and arterial hypertension. But cardiac muscle may undergo another type of stress which has no parallel in skeletal muscle exercise. The heart may dilate, which means that the resting length of the fiber is increased beyond normal. It has long been believed that dilation leads to hypertrophy. This has never been satisfactorily proved, for the methods used to produce the dilation have usually also increased the resistance to ejection, and this in itself may be the cause of the hypertrophy. If dilatation leads to hypertrophy, it may well be due to the fact that when dilated the heart assumes a more spherical shape, and with this shape the individual fibers must generate greater tension to produce the same pressure within the chamber. This would represent increased loading of the fibers. In any case dilation alone can not be an important cause of hypertrophy for with myocarditis, or beri-beri, where dilatation of the heart is perhaps a primary morphologic change, rarely is the heart weight much increased. Aortic insufficiency often leads to massive increases in heart weight without appreciable outflow resistance. However, here the increased weight of the heart is often to a striking extent due to an increase in fibrous tissue, occasionally amounting to nearly a third of the weight of the left ventricle.

Factor of Age

You and I, who ruefully put aside our barbells years ago, know that another variable which influences the degree to which one can develop skeletal muscle hypertrophy is age. The superb physique is a type of glory which comes at some time between the ages of 17 and 24 years, and if one has not achieved his magnificence by this age it is unlikely that he ever will grace a Charles Atlas advertisement, no matter how hard he exercises. This raises an intriguing question for clinicians. Is it possible that there is also an age variable in the capacity of the heart to develop hypertrophy? Perhaps the high mortality from congenital and rheumatic heart

disease in the fourth and fifth decades is because of a diminished capacity for hypertrophy at this age, and possibly the reason why aged patients tolerate heart disease so poorly is in part because of the virtual absence of a capacity of the heart to hypertrophy in such patients. These speculations imply that hypertrophy would be a useful adaptation in these cases, and I hasten to point out that it is not yet proved that hypertrophy is, in fact, "good" for the ailing heart.

That there is an age difference in the capacity of the heart to hypertrophy seems to be beyond question. The most massively hypertrophied hearts (for their age) are encountered in infants and children with congenital heart disease. This may be partly due to the fact that the myocardial fibers are still undergoing cell division at birth and, if a hemodynamic stress is taking place at this age, it may well result in a much greater number of myocardial fibers than if the same lesion developed at a later age. The effects of age can also be seen in acquired heart disease. Among patients with aortic stenosis or arterial hypertension, the heart weight at death is generally greater among young subjects than among older subjects. And elderly patients who die of what we call arteriosclerotic heart disease often show little or no increase in heart weight beyond the normal. Experiments were done several years ago by Beznak and Hadju which suggested that some part of the pituitary gland, perhaps the growth hormone, was necessary for skeletal muscle and myocardial hypertrophy to take place. However, more recent experiments indicate that the role of growth hormone may only be to promote the connective tissue hyperplasia which always accompanies muscular hypertrophy. In any case, further research along these lines is clearly needed.

What Happens?

When the body builder increases the circumference of his biceps, is he increasing the diameter of his fibers, or increasing their number, or both? The answer is not known for no one has ever counted the fibers of the hypertrophied versus the normal human biceps. Captain Behnke of the U.S. Navy, who is an imaginative and sound physiologist, has been studying the relationship of lean body mass to various aspects of skeletal structure in man and suggests that the successful body builder is structurally, if not

genetically, different from we ordinary persons from the beginning, and probably had potentially if not actually more skeletal muscles fibers in his biceps even in childhood. In other words, he suggests that Mr. America is born, not made. This may come as a blow to the young men on the beaches of California, but I rather suspect that Captain Behnke's suggestions will be viewed as academic by the body builders and their admirers, and that weight lifting will continue despite his findings. But even if Captain Behnke's suggestions prove to be correct, it is still possible for the weight lifter to increase his muscle size still further by maximal loading. Indeed, it is reported that by the technique called "cramping," in which after a set of 10 maximally loaded contractions of the biceps one immediately gives its antagonists a set of 10 maximally loaded contractions, one can increase the circumference of the upper arm by two inches within an hour. Blistering of the skin may even appear, presumably due to the tremendous intravascular pressures on the trapped anoxic blood.

Something analogous to this acute hypertrophy is also known to occur in the heart. In the classical experiments Dr. Wearn performed many years ago, he showed that with acute partial constriction of the aorta in the dog, an increase in heart weight and myocardial fiber diameter occurred within an hour, which was entirely due to acute edema and was quickly reversible. This is, of course, not the type of hypertrophy which develops with chronic heart disease.

Myocardial Fibers

While the body builder can tell us much about the technique for the development of hypertrophy, we must turn to the cardiac pathologist to learn what happens to the myocardial fibers when hypertrophy develops. On the basis of Dr. Wearn's studies, it was long believed by American pathologists that in cardiac hypertrophy there is no increase in the number of myocardial fibers. However, Dr. Linzbach, one of the most eminent of German pathologists, conclusively showed more than a decade ago that this is not so, and we and many others have confirmed Dr. Linzbach's findings. Linzbach has shown that in man, whose normal heart weight is in the neighborhood of 400 grams, increases of heart weight to 500 grams are principally if not entirely attributable to increase in fiber diameter,

and this he calls "physiological" hypertrophy. It is the type of cardiac hypertrophy which the career athlete acquires. However, when the heart weight exceeds 500 grams (as is usually the case when clinically, radiologically or electrocardiographically significant hypertrophy is present), there is always an increase in the number of myocardial fibers. Of course, the myocardium is a muscular syncytium; Linzbach uses the term "fiber units" for the interconnecting fibers of the syncytium; and it is these that are increased in number with what Linzbach calls "pathologic" hypertrophy. The increase takes place by longitudinal splitting of the fiber when it reaches a maximal diameter. We have seen a case of atrial septal defect with congenital mitral stenosis in which there was a nearly sevenfold increase in the number of fiber units in the free wall of the right ventricle, and three and fourfold increases of fiber units in the left ventricle are not uncommon in aortic stenosis or severe hypertension.

The demonstration by Linzbach that marked cardiac hypertrophy is associated with an increase in myocardial fiber units is extremely important for several reasons. In the first place, it becomes all the more possible that hypertrophied muscle has different biochemical, physiological, and pharmacologic properties than normal muscle. Before we can know whether hypertrophy is beneficial or is detrimental for heart function, we must compare these properties of hypertrophied muscle with those of normal myocardial fibers. So far such studies have not been done. In the second place, it means that cardiac hypertrophy can be viewed as a special type of tissue growth, and the principles and experimental techniques of growth physiology can be applied to it. For example, for all tissue growth there must be particular biochemical and often hormonal substrata. When the metabolic substrata necessary for cardiac hypertrophy are known, they may lead to pharmacologic methods for accelerating or retarding or even reversing it. The therapeutic implications of such a discovery are enormous and would be of great interest to people in many other fields besides medicine. For example, cattle-breeders, horse-racers and Olympic athletes all must be interested in methods to increase muscle mass and perhaps thereby muscle strength. And I dare say there are even a few in this audience who would be interested in buying a pill which would increase the size of their

biceps, or firm up their abdominis rectus muscles.

Which Is Stronger?

Is a hypertrophied muscle stronger than a normal muscle? We can not take the word of the body builder for this because in addition to his big muscles, he has also developed a high degree of muscular co-ordination and efficiency which contributes greatly to his weight-lifting prowess and, in addition, he has an emotional or motivational factor which you and I do not. There is no question that muscular hypertrophy is a usual consequence of lifting great weights, but that it makes the lifting of the great weight possible has never been proved. For example, we are all familiar with the feats of incredible strength which normal persons are capable of in moments of great fear or rage. And we have seen the pictures of the great muscular strength which allegedly can be produced in normal persons by hypnotic suggestion. That normal muscle can, under certain circumstances, contract as forcibly as hypertrophied muscle appears to be true also of cardiac muscle. If you suddenly completely occlude the aorta in the experimental dog, the intraventricular systolic pressure rises to about 400 mm. Hg. with the next beat. This is a higher pressure than is seen in man in even severe hypertension with marked left ventricular hypertrophy. And with the introduction of left ventricular catheterization, it has been possible to measure the intraventricular pressure in a man in aortic stenosis, a condition which is analogous to partial occlusion of the aorta in the dog. In severe aortic stenosis, the left ventricular systolic pressure is usually between 300 and 350 mm. Hg. in spite of the presence of massive left ventricular hypertrophy, a pressure which is no higher than the normal dog heart can generate. This indirect evidence suggests that the normal heart can, under special circumstances, generate pressures as high as the hypertrophied heart. Of course, it is possible that the role of hypertrophy is to make it possible for the heart to sustain such pressures over long periods of time. However, this has never been studied and is only a conjecture.

There is other indirect evidence which suggests that hypertrophy does not necessarily improve the functional reserve of the heart. In the literature there are more than 20 reports of patients who, previously normal, suddenly sustained some form of structural, nonprogressive

intracardiac abnormality and survived for longer or shorter periods of time, such as traumatic perforation of the intraventricular septum, rupture of a papillary muscle, or an aortic leaflet, etc. In such patients, there is a sudden overloading of the heart of a type which should lead to hypertrophy. If hypertrophy were ameliorative, these patients should show improvement in their clinical condition as the hypertrophy developed. In none of the reported cases did this take place; instead heart failure developed and progressively increased until death two to six weeks after the accident. At autopsy all these patients showed cardiac hypertrophy. The development of hypertrophy had not measurably altered their clinical courses.

Inconclusive Evidence

This evidence is, of course, too indirect and too meager to be considered proof that hypertrophy is not "good" for the heart. And certainly it does not mean that hypertrophy is "bad." There are, after all, many case reports in the literature of patients who died suddenly with no previous clinical evidence of cardiac disability and proved to have what is called idiopathic myocardial hypertrophy at post-mortem examination. One of the most massive hypertrophies reported in the literature was of this type: a 20-year-old lad who had been a star athlete in his school died suddenly in the course of a basketball game; at autopsy he had a 2,000 gram heart due to hypertrophy with no other lesion to account for it. Presumably he died from an arrhythmia, but certainly the hypertrophy had not at all compromised his heart function prior to death.

However, occasionally hypertrophy does interfere with heart function. It must be remembered that the myocardium forms the walls of the ejecting chambers and hypertrophy may, under certain circumstances, alter the architecture of these chambers to the detriment of heart function. One example of this is the narrowing of

the outflow tract of the left ventricle which in certain cases takes place with marked hypertrophy of the left ventricle, producing a sort of functional subaortic stenosis. One can see the evidence for this obstruction in the tiny cusps or pockets of endocardium which develop on the surface of the outflow tract, the cusps facing the apex of the heart. They are produced by the turbulence resulting from the extremely high ejection velocities through the narrowed outflow tract. Whether this narrowing can be marked enough to produce clinical heart failure is not known with certainty. But Drs. Braunwald and Morrow of our surgical service have seen two patients they will report shortly in whom left heart catheterization disclosed a systolic pressure difference between the left ventricle and the aorta of almost 100 mm Hg. On the basis of this finding and the clinical evidence of what was considered to be aortic stenosis, they were operated on. No abnormality of the aortic valve or of subvalvular structures were found, only massive idiopathic left ventricular hypertrophy with no other structural abnormality of the heart. Evidently the narrowing of the outflow tract by the hypertrophy interfered with systolic ejection sufficiently to produce a clinical picture resembling aortic stenosis and leading to heart failure.

So, whether cardiac hypertrophy is "good" or "bad" for the heart must remain an open question at present. But I hope I have made you more aware of the great importance of the question to clinical medicine. As research increases in the two fields of quantitative cardiac morphology and myocardial biochemistry, this question will be high on the priority list for investigation, and I venture to suggest that the results of such research will bring changes to clinical practice in the next decade which will be quite as dramatic and important as the changes which the hemodynamic and electrolyte-balance researches have brought during the past decade.

PATHOLOGY OF OVARIAN TUMORS

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THE OVARY is the site of a great variety of tumors both solid and cystic and it will be entirely impossible for me to illustrate all of them in the short space of half an hour. I shall show you illustrations of some of them and try to say a few words about them as we proceed. I shall first show you some cysts because they may be confused with malignant tumors sometimes when the cyst has a papillary growth on the inside. It is not always possible to tell whether this is benign or malignant. This first cyst was found in the ovary of a 44-year-old woman who also had fibroids with adenomyosis. The cyst had a thickening of the wall in one place but this was due to additional follicular and corpus luteum cysts and there was no evidence of malignancy. Now, the next cyst occurred in a 70-year-old female, it was a large one; 20 centimeters in diameter. In this instance, the pedicle of the cyst had twisted around three times, so she came in as an acute problem. The cyst was multilocular and contained bloody fluid and clots. It may be benign. It was of interest that this woman had had a squamous cell carcinoma of the cervix treated successfully with radium 12 years before. In the next picture, I show you something that Dr. Golden spoke about this morning in his X-ray diagnosis of the abdominal mass. It is a dermoid cyst or teratoma of the ovary containing teeth, bone and hair. It is benign. It is possible for one or more elements in a teratoma to become malignant and metastasize. The next lesion occurred in a 42-year-old woman who had suffered for several years with recurring abdominal pain, frequent stools of mucus and occult blood. This pain was not associated with menstruation. At operation it was found that she had extensive endometriosis and adenomyosis. One of her ovaries was converted into a so-called chocolate cyst because of the endometrial tissue in it. The lymph nodes in the sigmoid mesocolon also had endometrial tissue in them. This is not to be construed as evidence of malignancy. The chocolate cyst was found in an ovary that also had a teratoma in it. This hap-

pened to have thyroid tissue as one element. When an ovarian teratoma is composed almost exclusively of thyroid tissue it has been called struma ovarii.

The next ovarian mass is a solid one. It is composed of fibrous tissue and glands and is called an adeno-fibroma. This benign tumor was an unsuspected finding in a complete hysterectomy with removal of tubes and ovaries in a 59-year-old woman. The ovary measured 4.8x3 centimeters. It is a rare tumor form. The next is also a solid benign tumor found by chance in the ovary of a 62-year-old woman. This is a small Brenner tumor. These are almost always benign, but malignant examples have been reported. It is of interest that Brenner tumors can vary enormously in size. This one is small, but examples weighing more than a kilo have been reported.

Theca Cell and Granulosa Cell Tumors

The next example is also benign, but it is one of the tumors that is hormonally active, secreting estrogen. This one developed in the ovary of a 73-year-old woman and produced post-menopausal bleeding because it secreted estrogen. It is called a theca cell tumor. It measured 11x7x5 centimeters and weighed 140 grams. While most Theca cell tumors are benign, malignant variants that metastasized have been reported.

Closely related to thecomas are the granulosa cell tumors. These, too, secrete estrogen. Many granulosa cell tumors may have theca cell elements in them and many theca cell tumors may have granulosa foci in them. They are generally called by the dominating tissue. Granulosa cell tumors somewhat more often demonstrate malignant features than do theca cell tumors. The next case is an example of implants found scattered over the peritoneal surface of a 50-year-old woman who had previously had a granulosa cell tumor removed. A majority of the metastases from granulosa cell tumors are found in the peritoneum and sometimes in the retro-peritoneal lymph nodes and liver. It is rare for meta-

stases to be found above the diaphragm in the lungs and mediastinum, but I have seen this occur.

In order to illustrate the large size that granulosa cell tumors may attain, I show you one that measures 26x9 centimeters and weighs 7 kilos. It is predominantly granulosa cell with inconspicuous thecal elements. It grew in a 48-year-old woman.

Now, we come to the more common carcinomas of the ovary which can be divided into the papillary, serous and the papillary pseudomucinous carcinomas or cystadenocarcinomas. They vary markedly in the degree of differentiation. There is a variety that is quite well-differentiated and perhaps only on the border line of malignancy. If it is removed intact, it may not have metastasized at all, but if, as unfortunately sometimes happens, there is spillage, the tumor cells are apt to form implants on the peritoneum. The example I show happens to be the serous type of papillary carcinoma. It is bilateral as so many of them are. In addition to forming implants on the peritoneum, these tumors may metastasize to the retroperitoneal lymph nodes and further afield to the lungs and elsewhere. In addition to the papillary ovarian carcinoma, there are adenocarcinomas and undifferentiated carcinomas that are more malignant than the papillary tumors. Now, there is some question as to whether endometriosis or adeno-myosis gives rise to carcinoma. I think that happens very seldom, but I am very sure that it does occur and in the ovary it develops a very special kind of carcinoma, that is, an adenocarcinoma with squamous metaplasia.

Dysgerminomas

There is another form of malignant tumor that comes probably from undifferentiated sex cells of the male type in the ovary; that is the dysgerminoma. Dysgerminomas are tumors that can occur not only in adults, but also in children. They are solid tumors, they look like the seminomas of the testes histologically, but I don't think that they metastasize as frequently as do the seminomas of the testes. This dysgerminoma developed in a 35-year-old woman and this case did metastasize and kill, but we have some children as well as adults who have been followed after oophorectomy and have been cured by the removal of the ovary. In my ex-

perience, the dysgerminomas are generally confined to one ovary. The next one is an example of so-called arrhenoblastoma of the ovary which is hormonally active and secretes the male sex hormone. Sometimes such tumors masculinize an adult woman to a remarkable degree, but sometimes apparently, when there is a small amount of the hormone, there may be only some small degree of defeminization. In this case, the only symptom of this 42-year-old woman was a cessation of menstruation. When this was investigated, the ovarian arrhenoblastoma was removed.

There is one more type of tumor of the ovary that will be demonstrated. This is a metastasis in the ovary coming from another site. Such metastases account for a considerable number of malignant tumors in the ovary and it is well-known that the stomach is the commonest site of the metastasizing tumor. However, metastases to the ovary may come from other sites. For example, here is a 43-year-old woman with a carcinoma of the jejunum that has metastasized to the left ovary. In the female, metastases from colonic tumors are said to be sufficiently frequent to the ovary to make it worth while to do an oophorectomy when treating carcinoma of the sigmoid colon. We have examples of metastases to the ovary from the breast, from malignant melanomas, from kidney carcinomas, and from all the parts of the gastro-intestinal tract, the gall bladder and pancreas and, at autopsy, one may find, small metastases in many other cases of generalized carcinomatosis.

It has been a puzzling thing to me to observe the behavior of metastases in the ovary. One of the first cases of metastases from the jejunum to the ovary that I saw resulted in metastases to both ovaries. In one ovary, the metastasis remained at microscopic size; the other grew in the space of three months to a tumor weighing 16 pounds. It makes one wonder what there is about one ovary to provide such a fertile ground, while the other ovary remained quite non-receptive to the growth of the metastasis.

In this hasty survey of ovarian tumors and cysts, a majority of the well known varieties have been illustrated, but there are many variants of these tumors and some others which have not even been mentioned. It was impossible to do better in the time allotted.

SURGERY OF HEMORRHOIDS, FISSURES AND FISTULAS

John W. Howser, M.D.

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MR. CHAIRMAN, members and guests, this may seem to be an unusual subject coming at the end of a long and interesting group of papers read today. However, I have found treatment of many of the rare and complicated lesions found elsewhere in the body do not result in as satisfactory a result as does the correct understanding and treatment of those rather minor lesions, anal fissures, fistulas and hemorrhoids.

Often, after performing major surgery on the colon, pancreas, stomach or bile ducts, the patient is left with draining fistulae, colostomies, or is faced with a rather hopeless and downhill course. Consequently he may not be grateful for the operation, however perfectly performed, under such conditions. On the other hand, one will rarely find a more grateful patient than one upon whom a satisfactorily performed rectal operation has been done.

Unfortunately there are several pitfalls in the correct and satisfactory treatment of fissures, fistulas and hemorrhoids. These pitfalls fall into two categories, (1) Careless diagnosis and (2) Inadequate knowledge of the anatomy concerned.

Concerning the first point, usually a patient knows nothing about the condition he has when he consults a doctor for help. The doctor, as a result, is forced to work up the patient and investigate all possibilities which could be causing the presenting symptoms. This is not true in the lesions under discussion. Almost any patient suffering with hemorrhoids, fistulas or fissures has had the condition for some time and considers the present complaint to be a recurrence or exacerbation of the old condition. He arrives for treatment with the statement of the diagnosis. Ordinarily this might be considered to be a help for a doctor. In this instance, however, let us analyze the symptoms which are present in this group of lesions, contrasting them with the symptoms of cancer of the colon.

The essential symptoms of hemorrhoids are, rectal pain or distress, bleeding with or without protrusion, and a secretion of mucus, intermittent or steady.

A rectal fissure also causes pain, usually of a

severe nature, bleeding and a secretion of mucus. The essential point in a fissure is the severity of the pain, which is intense in many cases, due to the spasm of the sphincter, aggravated by the forcing open of the split area by the passage of stool at intervals.

In a fistula in ano, there is a secretion of mucus from the external opening, pain as the fistulous tract is stretched if the external opening closes, and a passage of blood of a varying amount. These symptoms may be constant or inconstant and variable as to the pain toleration of the patient in all of these three lesions.

There are those persons who have high pain threshold who may have very extensive physical findings and yet complain of very little pain or distress. We have all seen that in other areas of the body, as well as in normal physiological actions such as labor and delivery.

Symptoms

Let us now consider the symptoms of cancer of the right colon. The physiology of the right colon, being a part of the midgut, is concerned with the absorption of water from the gastrointestinal contents as it passes through the absorptive area of the right colon. The consistency of the stool in the right colon is essentially liquid in character. A cancer of this part of the colon does not obstruct this liquid stool until it has practically completely encircled the lumen. Although these cancers may bleed, the blood is mixed with a liquid stool, and becomes intimately mixed with the stool, so that no bright red blood is apparent to the patient in the passed feces. There may be a general sense of vague distress in the abdomen associated with cancer in the right colon.

In a consideration of cancer of the left colon, which normally contains and passes formed stool, there is usually a sense of distress in the left lower abdomen, with the increase of the peristaltic movements occasioned by the presence of the cancer. These lesions also ulcerate and bleed, and bright red blood is passed in the stool. In addition, irritability due to the presence of the cancer, the colon secretes more mucus than is usual, and this is passed by the

patient after the formed stool is passed, resulting in the well known "diarrhea." Although the left colon lesions may be silent, as are the right colon lesions, the presence of cancer of the left colon usually produces more symptoms.

Comparing them, the symptoms of the three minor lesions hemorrhoids, fistulas and fissures, with cancer of the two sides of the colon, the symptoms are identical, except as to the amount of pain. In fact, the least serious lesion, anal fissure, produces the most intense symptoms, that of spasm and pain.

In order then to accurately diagnose any lesion which presents the symptoms of rectal bleeding, distress associated with the passage of stool and secretion of mucus, a definite plan of action is indicated.

It has been established that 75 per cent of all cancer of the colon occurs in the rectum and lower sigmoid. The remaining 25 per cent occurs above the mid-sigmoid region. Therefore the examination incident to diagnosing correctly a lesion producing the above symptoms must include what has been termed the "colon survey," which is (1) a rectal digital, (2) sigmoidoscopic examination and (3) a barium enema.

Everyone is familiar with those patients who have had cancer of the colon, upon whom a minor operation for rectal disease has been performed, who continue to bleed and finally are found to have a cancer, the treatment for which has been delayed through the missed diagnosis and unnecessary operation. These tragic occurrences are preventable and regrettable.

If one considers that the average length of the index finger is 8 cm, one doing a rectal digital excludes 25 per cent of all cancer of the colon, and by further passing a 25 cm sigmoidoscope, further excludes 50 per cent of these malignant lesions, it seems little enough to do to prevent missing the cancer of the rectum or sigmoid.

I would like to make a special point regarding the ordering of the next step, the barium enema. Many of these patients will have such vague complaints that the upper gastrointestinal tract needs to be studied, so that a barium meal is indicated. It should always be emphasized that the colon should be x-rayed first, if there is to be a complete gastrointestinal series of x-rays made. This prevents the dehydrated barium from above, having passed through the right colon and becoming further dehydrated from

becoming impacted against a cancer of the left colon, producing a mechanical intestinal obstruction at this point. If the colon x-ray is done first, the barium mixture can easily be flushed out with enemas.

It must be pointed out, of course, that the barium enema is not accurate for lesions of the rectum between 10-20 cm from the anal orifice, and sigmoidoscopy must be done. Any of the two diagnostic procedures of the colon survey triad would be incomplete therefore without the third, and could result in missing perhaps one-third of all cancers of the colon.

Importance of Workup

Relating to completeness of medical workups, and perhaps touching a sensitive subject among private, individual doctors, is the tremendous success which large clinics seem to enjoy. It is common to note that patients refer to going "through" a clinic, and are apparently satisfied that this is a necessary and desirable part of their visit to such a clinic. The same patient will refer to going "to" a private, individual doctor. The key point is that by putting a patient "through" a workup, conditions are found which could be missed by a less thorough workup. Among these is certainly cancer of the colon. There is no reason why such diagnosis and workup could not be expected from an individual doctor, who had mastered the technique of passing a sigmoidoscope, working in association with a roentgenologist in his local hospital.

There is one of the minor conditions, namely an acute anal fissure, in which it is impossible to complete the colon survey until after the treatment for relief of the acute pain and spasm. Even the rectal digital must be done with extreme care and consideration. However, after the treatment is done, the patient should be told that before he is discharged, two additional procedures must be done, at which time the sigmoidoscopy and barium enema can be suggested.

Sometimes patients, when informed that they have a hemorrhoid, fistula, or fissure ask whether this can "turn into cancer." Such a relationship would be difficult to establish, but on the other hand, all three of these conditions can be the result of an already present cancer of the colon, a point not usually noted.

It is a fact that any obstructive lesion, by in-

ducing bearing down and straining can produce hemorrhoids and prolapse of the rectal mucosa. It is also true that a cancer above the mucocutaneous junction and below the level of the levator ani shelf can perforate the rectal wall, and the gut being uncovered by serosa at this level, allow an abscess identical with an ischiorectal abscess to develop. This abscess, incised or draining spontaneously, will result in a fistula in ano. Likewise, a hard fecal impaction above a carcinoma, pushing through the bowel higher up can result in the passage through the anal canal of a large bolus of hard stool which cracks the cutaneous portion of the anal canal, resulting in a fissure.

In discussing the second category of error which can be associated with treatment of hemorrhoids, fistulas and fissures I earlier mentioned inadequate knowledge of anatomy.

Poorly Understood Field

Nowhere in the field of surgery is the anatomy so poorly understood by the average surgeon than in the lower rectum and anal canal. This may result from the fact that early studies in anatomy by the medical student were hasty, and that the cadaver used by the student is difficult to expose in this area. By the time the lower colon and perineum was reached, the parts had dried up, and the fixative solution had distorted the parts. In many instances the anus had been sutured shut and the rectum filled with vaseline gauze and was full of feces. To accurately dissect this area at that stage was difficult indeed.

Subsequent study of this area can be acquired from books, upon a patient, or by mutual study of anuses by interested students. The difficulty of the latter course is obvious, the study of the patient undergoing surgery is not without criticism, so that reading in anatomy books is about the only course available, unless a fresh cadaver is available.

A short review of the main points in the development of the anal canal is in order in discussing this point. As may be recalled, the blind hind gut, lined by entoderm pushes down into the perineal area, at the same time the ectoderm is dimpling in to meet the blind rectal pouch. For a time an anal plate exists, lined inside with entoderm, outside with ectoderm and between these layers, mesoderm. If such a condition exists after birth, an "imperforate anus" is said to exist. Normally this plate breaks through and at

the level of the old anal plate a line of junction is formed, called the mucocutaneous junction, the pectinate line, or the dentate line.

The confusion here is that this line is perhaps one and one-half inches above the line of the anal orifice on the skin. This skin line is called the anal verge, and it must be emphasized that skin or stratified squamous epithelium thus continues upward for about 1½ inches into the anus, to the level of the pectinate line. It is a vitally important fact to realize that in understanding surgical directions in technical instructions, that the anal verge and the pectinate line are not the same.

The so-called "Hilton's white line," or pecten band, which occupies a position between the two major sphincters and also thus between the anal verge and pectinate line, (or true mucocutaneous junction) is said to result from excessive creasing of the stratified squamous epithelium by overlapping of the unequal pressure of the sphincters, and thus the fibrosis which develops is a "white line (of Hilton)." A better term for this line, and more informative, would be the "intersphincteric line."

Summary

A patient who presents himself for treatment and diagnosis resulting from the symptoms of rectal bleeding, mucous drainage or pain should be considered to have cancer of the colon.

Exclusion of cancer of the colon can be made by a colon survey which includes three steps: (1) rectal digital, (2) sigmoidoscopic examination, and (3) a barium enema.

Diagnosis of hemorrhoids, fistulas and fissures are thus established by direct palpation and vision.

Appropriate treatment for these minor lesions can be instituted, which, in the absence of cancer, should result in a satisfactory result.

To treat hemorrhoids, fistulas and fissures properly, requires a knowledge of the anatomy of the anal canal.

The exact level of the mucocutaneous junction, which is also called the pectinate line and dentate line, represents the level of the breakthrough of the old anal plate.

The anal verge should not be confused with the other line mentioned. It is covered with skin, ectoderm and stratified squamous epithelium.

The associated muscles, crypts and papilla are important as additional landmarks.

PUDENDAL BLOCK ANESTHESIA WITH NESACAINE®+

R. J. Jennett, M.D., H. H. Kuhlman, M.D. and
C. E. Davis, M.D.*
Phoenix, Arizona**

THE IMPORTANCE of providing the obstetrical patient with safe relief from pain has won wide recognition in recent years. In the past 10 years alone, more has been accomplished in the understanding of the principles of safe obstetrical analgesia and anesthesia than in the previous century."(1) The increase in the number of hospital deliveries, improvement in obstetrical nursing care and the greater awareness of the problems of childbirth by the mother have all played a part in this accomplishment, but the most important factor has been the appreciation by the physician of his obligation to provide his patient with the best possible anesthesiologic service. This has stimulated a rapid advancement in the perfection of new anesthetic agents and new anesthetic techniques which have made childbirth safer, less painful and technically more satisfactory.

With the development of newer anesthetic skills there has been a significant increase in the use of regional anesthesia for obstetrical purposes. General anesthesia exposes the patient to the dangers of aspiration of vomitus, post partum hemorrhage through loss of uterine tone, and instrumentation necessitated by her inability to participate actively in delivery. Fetal narcosis, especially in the presence of fetal immaturity or fetal distress is an ever present danger. These risks can be avoided through the use of effective local anesthesia. Of the techniques of regional anesthesia available, the safest and simplest is pudendal nerve block. This technique requires no special equipment and does not necessitate the services of a trained anesthetist. It is adequate for spontaneous and outlet forceps delivery, in some instances for mid-pelvic rotation and extraction, and for repair of episiotomy and lacerations.

In the recent literature on regional anesthesia, observers have been unanimous in their acceptance of Nesacaine (chloroprocaine HCl) as an anesthetic agent of great value.(2),(3),(4). The anesthetic potency of this agent is at least

twice that of procaine, and because of its extremely rapid hydrolysis by plasma cholinesterase, it is relatively non-toxic.(2),(5) In reported studies on a variety of types of nerve block, the results of Nesacaine anesthesia were characterized by (1) a higher percentage of success than with other agents, (2) rapid onset of action and (3) the absence of any systemic absorption reactions(2).

The present study was undertaken to investigate the applicability of Nesacaine to the technique of pudendal nerve block for obstetrical anesthesia. A series of 104 patients is presented.

Patients

The patients in this series ranged in age from 16 to 38 years. Thirty-two of the patients were primiparous. Of the 72 multiparous patients, 44 had had one previous delivery. Gestation time in 92 cases was between 38 and 42 weeks. In six cases, gestation time was between 42 and 43 weeks, and in six it was less than 38 weeks; the minimum gestation time in this series was 33 weeks. Surgical repair was performed in 100 patients (Table I) and in one case manual removal of the placenta was required. Forceps were applied in 55 cases (Table II). Of the 49 spontaneous deliveries, two occurred in breech presentation.

TABLE I

Type of Surgical Repair	Number of Patients
Midline episiotomy	98
Mediolateral episiotomy	2
Third degree extension	5
Fourth degree extension	3
Lateral sulcus tear	2

TABLE II

Type of Forceps Delivery	Number of Patients
Low forceps	45
Mid forceps	4
Mid forceps with rotation and extraction	4
Aftercoming head in breech delivery	2

Procedure: Preanesthetic medication was administered as indicated in Table III.

*Resident, Department of Obstetrics.

**This study was conducted at St. Joseph Hospital, Phoenix, Ariz.

+Nesacaine is supplied by Malthie Laboratories Division, Wallace & Tiernan Incorporated, Belleville 9, N. J.

TABLE III

Preanesthetic Agent	Dosage	Route of Administration	No. of Patients
Sparine or Thorazine	50 mg.	IM)	80
Nembutal	50 mg.	IV)	
Demerol	50 mg.	IV)	
Sparine or Thorazine	50 mg.	IM)	5
Nembutal	100 mg.	IV)	
Sparine or Thorazine	50 mg.	IM)	6
Demerol	100 mg.	IV)	

During the second stage, 58 per cent of the patients received light nitrous oxide and oxygen, and 27 per cent received Trilene. These agents were discontinued at the end of the second stage. Ninety-one of the pudendal blocks were transperineal and 13 were transvaginal. Using the transperineal approach, the needle was inserted at a point where a transverse line through the anus intersects a perpendicular line drawn from the outermost point of the labia majora fold. A finger in the vagina was used to guide the needle as the needle tip was directed to the medial aspect of the ischial spine. Blood was usually aspirated from the pudendal vessel and in this event, the needle was withdrawn slightly prior to injection. No attempt was made to block the ilio inguinal or posterior femoral cutaneous nerve. Transvaginal pudendal block was administered by inserting the needle directly through the vaginal mucosa and the sacrospinous ligament, close to the ischial spine, at a point overlying the pudendal nerve. Ten cc of a 2 per cent solution of Nesacaine was used to block each side in both the transperineal and transvaginal approaches.

Results:

Table IV lists the criteria for effectiveness of anesthesia. For classification as excellent, all of the criteria were required. The degree of analgesia was assessed by the application of an Allis clamp. The duration of analgesia was not generally recorded beyond the time when the patient left the delivery room.

Excellent results were obtained in 83 per cent of patients, and good results in 17 per cent. Most of the patients classified as showing good results had excellent block of one side. The effectiveness of pudendal block anesthesia was not related to the type of premedication or inhalation anesthesia.

Complications:

There were no complications attributable to pudendal nerve block. Such complications would include convulsion, shock, hematoma formation, and interference with uterine activity.

TABLE IV

CRITERIA FOR EFFECTIVENESS OF ANESTHESIA

Excellent: Anesthesia established in two minutes or less. Adequate perineal relaxation. Sufficient duration for perineal repair.

Good: Anesthesia established two to four minutes. Perineal relaxation equivocal. Return of perineal sensation before completion of repair, but without necessity of supplementary anesthesia.

Comments:

Pudendal block provides safe and effective analgesia for low forceps delivery, for assistance in delivery of breech presentations, for repair of episiotomy and lacerations, and in some cases for the management of mid pelvic arrest. The technique is easily mastered(6),(7) and obviates many of the difficulties and dangers to mother and child encountered in the use of general anesthesia, extradural anesthesia and spinal anesthesia. Nesacaine has proved to be a most satisfactory agent for pudendal nerve block. Anesthesia was rapid in onset and of high intensity. Particularly impressive were the large numbers of excellent results and the lack of those complications associated with systemic absorption of local anesthetic agents. The duration of anesthesia was satisfactory and the procedure was well tolerated by the patients.

Summary and Conclusions:

(1) Pudendal nerve block was performed in a series of 104 obstetrical patients using Nesacaine as the anesthetic agent. (2) The results were classified as excellent in 83 per cent of cases, and good in 17 per cent. (3) There were no complications associated with the use of Nesacaine. (4) Pudendal block provides safe and adequate anesthesia where regional nerve block is indicated, and Nesacaine is a most satisfactory agent for its accomplishment.

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Editorial Section

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 16 APRIL, 1959 NO. 4

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

8. Illustrations—Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.

9. Reprints—Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

THIRD-PARTY MEDICINE

THE NATIONAL quest for security at any cost has already forged the chains of socialistic slavery." This quotation is from an article in this issue entitled "The Third-Party Problem" by D. J. Heim, M.D. The author attempts to justify the endorsement of third-party practice of medicine on the premise that it is legal and ethical. He has largely avoided the issue as based on its merits and has not discussed the question as it relates to the quality of medical care and its role in the furtherance of socialism. The author has not yet realized that third-party control of medicine is the most essential and the strongest link of "the chains of socialistic slavery."

Before freedom loving people will accept revolutionary changes which take away their freedoms they must be subdued by a hot or a cold war. We are in the middle of a cold war which is being waged to change our time proven constitutional form of government. The ammunition of this cold war is subterfuge through brain-washing.

The wage earner is being deluded by the assumption that fringe benefits, as Medicare, are not a part of his rightful earnings. By definition—third-party medicine is misleading in that the third party is credited as being "responsible for the cost of medical care"—that the third-party has—"a valid interest in the payment of medical care" and that the wage earners are merely "recipients" of dole passed out by magnanimous employers. This is not old-fashioned hog-wash but present day brain wash.

The wage-earner has earned his fringe benefits as surely as he has earned his take home pay and in a free world he should have individual control of such monies. By the gradual severance of the individual from his just earnings a guardianship is being created and the individual freedoms are being destroyed. This guardianship is being tolerated because of the misconception that one can get something for nothing. This something-for-nothing philosophy will go down in history as a parallel to Rome burning while Caesar fiddled.

Dr. Heim correctly alluded to this "power of

third-party participation in the field of medicine." What is this power? It is the power to ultimately destroy individual freedom, initiative and productivity. It is naive to assume that such power will continue to be wholly altruistic. Kaiser Wilhelm, Hitler, Mussolini, Lenin, Stalin and Reuther are a few names to remember when we think of the delegation of the control of individual freedoms to third parties.

The spoiled fruits of socialized medicine, which is a third party medium, are pictured in the recent release by the magazine *Der Spiegel* (reproduced in March issue). The quality of medical care in West Germany is indeed disgraceful. Also in this issue is reproduced a news letter, of the Association of American Physicians and Surgeons, relative to the Larson Report which should be studied.

There must be a little good in all that is bad and a little bad in all that is good. So it is with socialism versus a free democracy and with third party medicine versus free choice of physician. The question is which will provide the most good not only for the present but in the future? Will third party control of medicine advance the cause of socialized medicine? Answer — Yes! Will third party medicine lessen the quality of medical care? Answer — Yes! (see "News Letter" and Socialized Medicine Floundering in Germany). The quality of medical care will start its decline as the number of panel doctors, working for the third parties, are in a majority and thus the necessary competition from the more superior free enterprise system will be destroyed.

The Chicago Tribune recently pointed out — "The defects of socialized medicine have already been abundantly manifest from the experience elsewhere. The record in West Germany deserves attention if only for the reason that Walter Reuther and the social democrats of the American labor movement have renewed their agitation for socialized medicine as part of the social security system."

We are not to be ashamed and stick our heads in the sands because Dr. Heim says — "The superior attitude of some medical societies in facing such problems (third-party medicine) can only serve to antagonize third party participants." We should be proud that some among us have the guts to antagonize those who,

through misguided altruism or who through recognized or unrecognized lust for power, insist on fostering that which is the major link in the chain of socialistic slavery. The freedom of choice of one's personal physician is as essential as the freedom to choose one's church or the freedom to vote as one desires.

¹ Dr. Heim has adopted a defeatist attitude in this battle long before it has ended when he made the statement — "Third party participation in the economics of medicine is here to stay regardless of the attitude of organized medicine." Here again he has ignored the quality of medical care and singularly concerned himself with economics.

The paretic Lenin was well aware of the significance of the control of medicine by a third party when he wrote that — socialized medicine is the keynote of the arch of the socialistic state.

L.B.S.

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SOCIALIZED MEDICINE*

THE SO-CALLED medical care bill now before congress is one of the most dangerous pieces of legislation submitted to congress in recent years. It would push the door wide open to socialized medicine. It would boost the already skyrocketing social security taxes far beyond any level so far contemplated, but even these additional taxes would not pay the cost of the proposed services. It would give the Washington bureaucracy a chance to extend its hold into every state and create a tremendous number of jobs for paper-pushers and frustrated social welfare workers.

In its present form, the bill, introduced by Rep. Aime J. Forand (D-RI), would provide medical care for old folks. The job would be done by the social security administration, which would assume entire responsibility for the hospitalization and doctors' care for everyone over 65. The costs would presumably be borne by raising social security taxes.

A worker earning \$4,800 or more a year would pay \$12 a year for the medical care program, in addition to a jump of \$24 already scheduled for Jan. 1. Even without the medical care assessment, social security taxes will take \$216 a year out of the first \$4,800 of workers' incomes by 1969. Employers must pay even more for each employee. If the medical care bill is passed, the social security tax for individuals will be \$285 a year on \$6,000, plus the employers' contribution. Self-employed will pay \$427.50 on their first \$6,000. But even these taxes would not support the program. Congressman Forand claims costs could be met "for some time at least," but increases in taxes are inevitable.

The next thing, undoubtedly, will be for the advocates of a welfare state to ask the government to provide medical services for young and middle-aged as well as the elderly. Right now 85 per cent of the industrial workers of the country are covered by hospital and surgical insurance, which carries the biggest part of the load when the insured person or a member of his family has to go to a hospital or requires surgical treatment.

Government medical plans are notorious for their tendency to grow and grow. Patients with imaginary ills rush for the doctors and the hospitals because "it's free." Of course, it isn't free.

The taxpayers have to pay directly in increased social security payments and indirectly in other taxes which go to meet deficits in government spending. The doctors, snowed under by people seeking "free medical treatment," can't give the proper attention to those who really need it. So the quality of medicine goes down and the quantity of taxes goes up.

The so-called liberal bloc in congress, composed of AFL-CIO supporters and left-wing Democrats and Republicans, will make a major effort to push the medical care bill through this session of congress. They will make every possible emotional appeal on behalf of the elderly. They will ignore the fact that most Americans can care for their own medical needs, with the help of insurance, and that those who can't do so already receive excellent treatment in the nation's dispensaries and charity wards. They will pile new and unconscionable costs on the working and middle classes, and in the end they will force socialized medicine on a nation that does not want it, does not need it, and will not benefit by it.

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*Reprinted from The Arizona Republic, Feb. 20, 1959.

EDITOR'S NOTES

III. The Role of Chemotherapy in the Management of Malignant Disease — Clifton D. Howe, M.D.

THE POTENTIAL palliation treatment in malignancy is enormous. In lung cancer with 31,000 new cases each year we are curing 4,000. There should be possible palliation for approximately 50 per cent. Breast cancer, 52,000 new cases per year, we are curing 38 per cent. Undoubtedly palliation should at least reach the level of 50 per cent. Prostate, 24,000 new cancer cases each year, we are curing very few, possibly only 7 per cent, and yet the palliation should be around 80 per cent.

In acute leukemia, a 50 per cent survival has been noted for five months in the untreated case. This was elevated to six months by the use of nitrogen mustard, to eight months by the antifolic acid preparations and steroids, to 12 months by the use of 6 Mercaptopurine and Azasorine and to 14 months by Dr. Farber's course of therapy.

Actinomycin D has produced remissions in solid tumors in children, particularly in the Wilms's group. This antibiotic shows a synergistic effect with radiation.

The fluorinated pyrimidines have effected regressions in cancer of the colon. They have shown some usefulness in lesions of the breast and hepatoma.

In choriocarcinoma in the female, Methotrexate treatment of 30 patients has resulted in remissions in 12 patients. Five are alive and well with no evidence of disease. However, there were one or two deaths as the result of the treatment.

The course of treatment followed a pattern comparable to this case: The female patient, 21 years of age, received four courses of Methotrexate, the first from May 11 to May 15, 25 mg. per day for a total dose of 125 mg. From June 7 to June 11, 125 mg. From July 1 to July 5, 125 mg. From Aug. 14 to Aug. 18, 125 mg.

With this drug, as with most of the other chemotherapeutic agents, a resistance is developed in time.

We may have a unique situation here, for in the mother and fetus there is a great increase in demand for folic acid.

Of the compounds now available for use in the treatment of cancer, the therapeutic dose and the toxic dose are almost as 1:1.

IV. The Development in Evaluation of New Chemotherapeutic Agents — Michael B. Shimkin, M.D.

In 1955, \$3 million was available for research in cancer chemotherapy. In 1958, \$35 million was available. In these studies, the tumors, sarcoma 180, CA 755, and leukemia L1210 are used in mice as transplant tumors using six test and six controls for all of the agents. Last year 40,000 drugs were screened, necessitating approximately 2 million test mice per year. Of the drugs screened, 1 per cent of the synthetics and 1 per cent of the antibiotics were "hits," or potentially useful.

Of the alkylating agents Degranal - BCM and Mannitol nitrogen mustard appear promising. Hungary has produced CB1414, the United States, Ross's Azo-mustard, in England and Russia, Sarcloysisin, in Germany A-1039. All are proving promising preparations.

In the antimetabolites, 6 MP Mercaptopurine, 5 FU seems to be of interest in cancer of the breast and colon. NSC-1026 is a hit at the national service center.

V. Problems of Clinical Investigation in Cancer Chemotherapy — Sidney Farber, M.D.

Cancer is not one disease, it is many disorders that we are trying to treat in many different stages in patients who are varying greatly in age and physical state. At present the problem is confused. We must use a proved treatment if such is feasible. We can not give anything but for the good of the patient. The family and state of mind of the patient may have much to do in the choice of treatment. The total status of the patient is the first consideration.

To date there has been not enough noted difference between the normal cell and cancer cell to permit the development of a specific thera-

peutic agent. Certainly we can not transpose the results found in mice to man.

Some of the drugs being developed may make radiation a more effective form of therapy. Combined therapy of the chemotherapeutic agents, surgery and radiation seems to be an opening development. Actinomycin D and x-ray cause a regression in a certain number of cases.

Malignant melanoma has been noted to regress under therapy with Tri-Ethyl Fluoramide or Tri-Ethyl Phosphoramide. This regression has been evident for as long as one year. They have been using these drugs directly inserted into the artery simultaneously clamping the vein from that organ or limb and in some of these cases following this with irradiation therapy. He anticipates the intra-arterial injection of many of these chemotherapeutic agents would prove to be a very important mode of therapy.

At present, we must consider first, surgical removal; second, radiation; third, chemotherapy; then repeated surgical treatment, if necessary, but at all times keeping in mind what is best for the patient.

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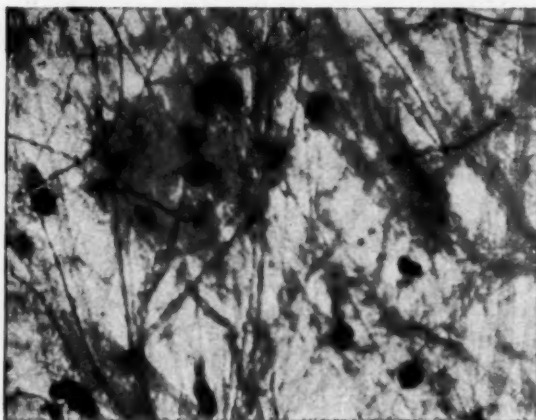
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Topics of Current Medical Interest

THE TWO-YEAR MEDICAL SCHOOL

Roy M. Johnson, Ph.D.*

THE RECENT interest in the potential American physician shortage has brought the two-year medical school to the attention of many educators. The official encouragement, by medical authorities, toward establishing new two-year schools has raised serious questions in the minds of groups contemplating new medical facilities. Is such a school adequate in the modern concept of medical education? Will graduates from such a school find openings available in the junior year? What is the cost of a two-year school?

It is in the area of cost that the two-year school finds its greatest strength. There is probably little argument, disregarding cost, that a four-year school with its own hospital facilities is most desirable. A modern concept of integrating, not only the four years of medical school but pre-medical work as well, is, indeed, a strong argument for considering only a four-year school. If this trend is adopted nationally, will a two-year school be "left out in the cold"?

In 1939 there were 10 two-year medical schools taking from 20 to 50 students per year and having a full-time faculty of from 16 to 36. (1) Since that time, seven have developed four-year programs to meet the increasing demand for physicians. Herein lies one argument for the two-year school. It provides the beginning framework from which a four-year program can be developed as the need increases.

The two-year medical school can often share physical facilities on a university campus with the science departments already there. A separate building to house the two-year facilities would cost between \$1 and \$2 million. Clinical facilities are commonly provided by co-operating hospitals in the area, thus eliminating the major cost of a four-year plant — the teaching hospital.

The operating budget of present two-year schools runs between \$250,000 to \$350,000. Several reports (2,3,4) have shown that a large portion of the operating budgets of four-year schools result from service to the community. Since the majority of such service stems from the clinical aspects of a facility, its budgetary role is considerably reduced in a two-year school.

One of the most comprehensive recent budget reports is that made by Emory University in conjunction with the Department of Health, Welfare and Education. (2) Table 1 shows the budget figures for the six departments normally comprising a two-year school as well as the percent of each attributable to educating a physician. Since Emory University has a four-year school, these six departments are more extensive than would be normal to a two-year school.

Part of the need for more two-year facilities can be seen in Table 2 which shows the attrition rate at four-year schools. These "lost" potential physicians can only be replaced by qualified two-year graduates and the 100 or so presently furnished by the three existing two-year schools is obviously inadequate.

In an attempt to evaluate the desirability of a two-year school in Arizona, a questionnaire was sent to the deans of all present medical schools.

The questions asked were:

1. How many openings have you had for the past two years in your junior year for two-year medical school graduates?
2. Do you see this number of openings as increasing, decreasing or remaining essentially constant?
3. In your experience, have two-year graduates had difficulty in meeting your junior year standards?
4. Would your medical school accept some graduates from an accredited two-year Arizona medical school?
5. What approximate percentage of your first two-years' work would be classified as "clinical"?
6. Do you see the present amount of clinical work in the first two years as remaining about the same, or increasing at your school?
7. Has your experience with two-year school graduates in the past been: favorable, unfavorable, no significant difference from others?

Seventy schools answered question one and indicated a total minimum of 472 openings for qualified graduates of two-year schools in the junior year. The minimum figure was used since some schools reported 5-10, in which case the lower average (7) was used for tabulation. Figure 1 shows the distribution of these openings

*Assistant Professor of Microbiology, Department of Zoology, and Pre-medical Advisor, Arizona State University, Tempe, Ariz.

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*Pratt, R. T. C., and McKenzie, W.: Anxiety States Following Vestibular Disorders, *Lancet* 2:347 (Aug. 16) 1958.

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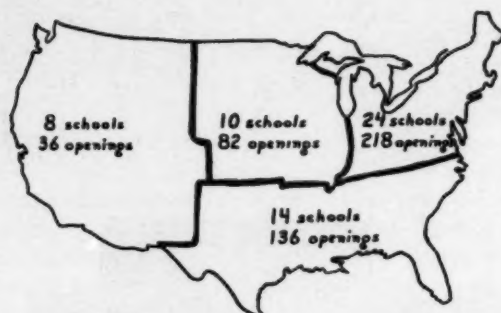


Figure 1

Third year openings, by region, in medical schools reporting such spaces available.

in four major regions of the country.

Of the 65 schools answering, 50 schools say their number of openings as constant, 11 felt there would be an increase and four saw them decreasing.

Fifty-six of the 65 schools commenting said the two-year graduate had no difficulty in meeting their junior year standards. Three schools said they did; three others said some extra work was required and finally, three said it depended on the two-year school.

In question four, any state or region could presumably be substituted for Arizona. Fifty-nine of the 67 schools answering said they would accept qualified two-year graduates. (It is significant here that two of these schools commented they could not accept "out-of-state" freshmen due to the state laws.) Five schools said they would not accept such graduates and three indicated it as "possible."

Questions five and six were used to determine the extent of clinical work which might be expected of a two-year graduate. Fifty-seven schools, answering this question such that it might be tabulated, demonstrated a range from 0 per cent to 35 per cent with an over-all average of approximately 13 per cent. Table 3 shows the distribution of these schools by percentage of clinical work in the first two years.

Forty of these schools saw their percentage of clinical work remaining constant for the future. Nine answered "some or slight increase"; five as "increasing" and three as "decreasing." Table 3 shows the present percentage of clinical work for those schools contemplating an increase or decrease.

Sixty-eight medical schools answered the last question indicating their experience with two-year students. Thirty-three saw no significant

difference from other two-year students; 23 reported their experience as favorable; nine indicated no experience to judge and three reported "unfavorable."

Several deans saw fit to add comments to the questionnaire both for and against the two-year school. All received are given below and identified only by general region of the country.

"... material offered at the various two-year schools presently in existence almost certainly would be considered as falling short of the clinical introductory material which we will desire after our program goes into operation in September 1959." (West)

"No, we have observed no difference between graduates of two-year schools and other transfer students. However, all transfer students do appear to have some difficulty in adjusting particularly to the junior year. The faculty makes every effort to make this adjustment as easy as possible for the student." (West)

"I feel very strongly . . . that there is a real place for two-year medical schools in the medical education picture of this country. Most of the four-year schools are in a position similar to ours in that they have sufficient clinical material to take care of more students than they can carry through the first two years of their program. Here we are limited to 76 students per class by virtue of the pre-clinical facilities." (East)

"From my experience of some 15 years in a two-year school, I could not, in all honesty, advise the establishment of a two-year school in the 1950s." (East)

"I have been interested in the development of such schools in the Southwestern and Western states for some time, since I am certain that students from such schools would have no difficulty in obtaining a place in four-year medical schools that are already established." (South)

(In answer to difficulty of two-year students meeting junior standing)

"In general, no. They have been at a slight disadvantage in clinical background, but have usually been able to overcome this with extra work." (East)

"It is our policy to accept for transfer only those students who have ranked in the upper third of their class previously. It has been our experience that these students do well the last two years in medical school. . . The geographical origin of transfer students is not important."

TABLE 1*
Emory University
Cost by Departments of Basic Sciences**

Item	Anatomy	Bacteriology	Bio- Chemistry	Pharma- cology	Physiology	Pathology	Total
Personnel	\$ 88,915	\$ 45,459	\$ 57,530	\$ 41,922	\$ 55,683	\$ 63,744	\$353,253
Other Direct							
Expenditures							
(Equipment,							
office supplies) .	22,621	5,400	4,890	6,244	6,218	7,230	52,603
Indirect							
Expenditure	25,762	16,727	25,424	16,894	27,154	26,346	138,307
Grants, contracts							
Special Purpose							
Funds	59,031	43,138	47,047	109,668	52,424	36,167	337,475
TOTAL	196,329	110,744	134,891	174,728	141,479	123,487	881,658
Per cent used							
for Undergrad.							
Medical Instr. ...	24.1	17.6	17.3	18.4	15.8	10.1	
Amount for							
Undergrad.							
Medical Instr.	47,230	19,472	23,338	32,107	22,327	12,400	156,874

*Emory University Pilot Study Analysis of Expenditures Medical Education Program, Part 1, Study Description, Summary and Conclusions, 1954-55, pp. 26-35.

**Fiscal year ending Aug. 31, 1955.

TABLE 2*
Attrition in the Approved Medical Schools in the United States
1956-57

Year	Enrollment	Failed	Withdrew Poor Standing	Withdrew Good Standing	Totals	Per Cent Enrollment Lost
First	8,014	276	92	176	544	6.8
Second	7,259	110	14	70	194	2.7
Third	7,023	49	14	25	88	1.1
Fourth	6,834	11	5	14	30	0.3

*Medical Education in the U. S. and Canada, Journal of American Medical Ass'n., Vol. 165, p. 1428.

TABLE 3
Clinical Work in First Two Years of Four-year Schools

	Per Cent of Clinical Work in First Two Years								Total
	0	5	10	15	20	25	30	35	
Number of Schools reporting	3	9	21	12	7	5	1	1	59
Percent of schools indicating future increase		2	7	2	1	1	1		14
Per cent of schools indicating future decrease		2	1						3

(South)

"As two-year schools are formed, we will provide more openings. Anticipate openings for from 15 to 25." (Midwest)

"It is our belief that there is a need in the United States for additional two-year medical schools. The casualties occurring in normal freshman and sophomore operations leave available space in most medical schools for additional third-year students." (East)

As might be expected from a group of this caliber, there is a difference of opinion on the subject of two-year medical schools. The large majority of present medical facilities, however, indicate their acceptance of this concept as regards both need and co-operation. For those groups contemplating a medical facility but limited, to a degree, by financial support, the two-year medical school would appear to be the modern solution which could best serve both the area and country at the present time.

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THE ARIZONA MEDICAL ASSOCIATION, INC.

COUNCIL MEETING

Meeting of Council of The Arizona Medical Association, Inc., January 1959, Phoenix, Arizona, Lindsay E. Beaton, M.D., Chairman, presiding.

Membership Classification Changes

GREENLEE COUNTY MEDICAL SOCIETY:

IT WAS moved, seconded, and unanimously carried that council approve associate membership, dues exempt, for Charles H. Laugharn, M.D., retroactive to Dec. 22, 1958, effective Jan. 1, 1959, account illness, as recommended by the Greenlee County Medical Society.

PIMA COUNTY MEDICAL SOCIETY:

It was moved, seconded, and unanimously carried that council approve associate membership, dues exempt, for Elizabeth H. Laidlaw, M.D., retroactive to Dec. 9, 1958, effective Jan. 1, 1959, account illness, as recommended by the Pima County Medical Society.

MARICOPA COUNTY MEDICAL SOCIETY:

It was moved, seconded, and unanimously carried that Maricopa County Medical Society be informed that in accordance with the by-laws of this Association, the recommended "associate" membership classification changes for Palmer Dysart, M.D. (withdrawal from private practice to full time employment as medical consultant of the Division of Vocational Rehabilitation for the State of Arizona), and James R. Moore, M.D. (withdrawal from private practice to employment as full time medical advisor to the Arizona State Industrial Commission and medical consultant to the Arizona Blue Cross-Blue Shield Medical Service Plans), would fall within its "service" category, (full time permanent employee of other national, state, county or municipal government), one-half state dues, and if the society will resubmit its request on such basis, council will approve thereof retroactive to Dec. 31, 1958, effective Jan. 1, 1959.

PROFESSIONAL BOARD

Membership Resignation

Willard V. Ergenbright, M.D. (Phoenix), by letter dated Dec. 4, 1958, submitted his resignation as a member of the professional board of this association and as such, chairman of its subcommittee on crippled children, due to reasons of ill health. Council accepted his resignation.

Charles S. Powell, M.D. (Yuma), by letter dated Dec. 29, 1958, submitted his resignation as a member of the professional board of this association, due to pressure of other obligations. Council accepted his resignation.

Interim Membership Appointment

Doctor Manning, president, announced appointment of Ray Fife, M.D. (Phoenix), to membership on the professional board and as such, chairman of its subcommittee on crippled children, to fill the unexpired term 1958-61, caused through resignation of Doctor Ergenbright.

It was moved, seconded, and unanimously carried that we approve the appointment of Doctor Fife to membership on the professional board and as such, to chairmanship of its subcommittee on crippled children, for the term expiring in 1961.

PUBLIC RELATIONS BOARD

Membership Vacancy

The demise of Raymond F. Lamb, M.D. (Casa Grande), was reported, creating a vacancy on the public relations board. It was determined that the remaining membership is sufficient for the present requirements of the board. No action taken.

SAFETY COMMITTEE

Membership Resignation

Willard V. Ergenbright, M.D. (Phoenix), by letter dated Dec. 4, 1958, submitted his resignation as a member of the safety committee, due to ill health. Council accepted his resignation.

Interim Membership Appointment

Doctor Manning, president, appointed Thomas H. Taber Jr., M.D. (Phoenix), to membership on the safety committee, to fill the unexpired term 1958-59, caused through resignation of Doctor Ergenbright.

It was moved, seconded, and unanimously carried that we approve the appointment of Doctor Taber to membership on the safety committee for the term expiring in 1959.

CONSTITUTION AND BY-LAWS COMMITTEE

Articles of Incorporation and By-Laws — Proposed Revision

Council considered the proposed revisions of its articles of incorporation and by-laws, recommended by its committee on constitution and by-laws. Review in each instance was completed

by article, chapter and section, numerically in order, with general discussion following each proposed change. Supplemental revisions were directed as indicated.

Doctor Holmes recommended that the articles of incorporation be not opened up to general discussion at the second meeting of the house of delegates in April, suggesting that only the proposed changes in the articles be sent to the members of the house; and that such changes be considered individually as proposed amendments.

Mr. Jacobson reviewed and explained the proposed amendments to the articles of incorporation.

Doctor Holmes reviewed and explained the proposed amendments constituting a complete revision of the by-laws.

It was moved, seconded, and unanimously carried that the council go on record approving for submission to the house of delegates, the suggested amendments to the articles of incorporation and the revised by-laws, as prepared by its constitution and by-laws committee and as further amended by council.

Doctor Beaton stated: "Rather than go into the details of this presentation, the council will depend on Doctor Holmes to work with Doctor Jarrett, speaker of the house as to the details of how this is to be presented to the house of delegates at the first session. This will involve whether you are going to use readers, and how you want to do it.

"I think that when we send this out to the delegates, we should send a very careful letter along with it stating that this has been reviewed, that your council feels that this is in satisfactory form, and does not anticipate any lengthy discussion on the floor of the house, although there will, of course, be opportunity for any revisions to be made."

Doctor Beaton expressed council's thanks to Doctor Holmes and his committee on constitution and by-laws for its excellent revision of the by-laws.

CONFERENCE ON AGING — ARIZONA

AMA Report — Jesse D. Hamer, M.D. — Delegate

DOCTOR HAMER: Some actions took place in Minneapolis at the AMA House of Delegates meeting that created a great deal of favorable comment throughout the nation and in the press.

The appearance of the governor of Minnesota

before the house with a prepared paper, dealing largely with the care of the aged, perhaps stimulated more definitive action on the part of the house of delegates, knowing the thinking of the governor, who is noted pretty well for his liberal views on health care; and following, of course, the September meeting of the conference in Chicago, which was attended by practically all of the state medical associations, on the care of the aged and the problems presented by that group of our senior citizens; and other things such as proposed legislation which appeared in the national congress last year, namely: the Forand bill. It was preferred the delegates take certain action which, of course, referred it back to the states for their approval, acceptance, rejection or action.

Of course, time won't allow us to go into a lot of details of that action and what it implies, but in a summary report of the house of delegates in regard to care of the aged, the house did approve a program; a policy of attempting to get the members of the medical profession, nation-wide, and the insurance companies and our Blue Shield plans, to co-operate in a plan in an endeavor to provide in some way for the medical needs of our senior citizens. Not only in the matter of trying to figure out policies which would be within the financial scope of the elder generation, but in the reduction in the care of these people on a reduced fee basis on the part of the physicians, and I presume all of you have received the issue of the AMA News which outlines the actions taken by the house of delegates on this, and other matters.

The AMA acted upon a recommendation of the council on medical service that constituent and component medical societies of all physicians, everywhere, expedite the development of effective, voluntary health insurance on a prepayment program, for the group over 65 with moderate resources, or low family income. In order to effect immediate implementation of such a program, the house directed that such proposals be directed to medical societies' approved plans, including Blue Shield and private insurance programs. Before the house, Doctor Gundersen, the president of the association, made the statement that the national Blue Shield commission is already thinking in terms of the implications in this action.

I don't know much about what went on at the meeting of the AMA in Chicago. Doctor

Wormley from our professional board did attend that meeting, and I presume has prepared a report, and the entire proceedings have been published. I think this should be referred to the proper committee of this association.

It was reported that Lowell C. Wormley, M.D., Phoenix, has been appointed chairman of the subcommittee on aging of the professional board and that meetings are currently scheduled, with some already completed, with interested groups in Phoenix and Tucson.

No action taken.

*AMA Request from State Medical Societies —
Report of the Commission on Medical Care
Plans — Action*

DOCTOR HAMER: The report of the commission on medical care plans culminated from three years of study of all types of medical care plans in the country, a very exhaustive report, came before the house of delegates. There were a lot of pros and cons presented before the reference committee, and as a result of disagreements and failure to crystalize policy that could be accepted by the house, the house adopted the report of the reference committee that the final adoption of the report be deferred until next June. In the meantime, it did also adopt the recommendation of the reference committee, specifically suggesting to the constituent associations that they study this report and, in the interim between the December meeting and the next June meeting, express to AMA their attitude regarding it in the hope of clarification, if they arrive at some decision in regards to the following basic points: (a) "free choice of physician," and (b) "closed panel systems."

Now, as to the importance of the "free choice of physician," is the concept to be considered a fundamental principle, incontrovertible, unalterable, and essential to good medical care without qualification? As to the "closed panel systems," which is touched upon at length in this report, what is, or will be, your attitude toward physicians who participate in these systems of medical care, which are restricted as to choice of physician? These two questions acknowledge that the policy of the AMA to encourage and support the highest quality of medical care for all patients remains unchanged. They question, however, whether attitudes toward the free choice of physician and closed panel systems may be undergoing evolutionary changes. So the house recommended that the

board of trustees invite the constituent associations to forward their replies to these two questions to the executive vice president, 60 days in advance of the June 1959 meeting. I believe this should be forwarded to our fee and contractual medicine committee for study.

It was directed that a letter be forwarded to Dr. J. Heim, M.D., in response to his letter of Jan. 8, 1959, to the effect that his letter, along with other matters pertaining to this aspect of medicine are being studied by the fee and contractual medicine committee and that the AMA is also studying the problem.

It was moved, seconded, and unanimously carried that this committee (fee and contractual medicine committee) report to this council at its April meeting so that council can give consideration thereto, or take it to the house of delegates for official action, and then forward it to Doctor Blessingame.

MEDICARE COMMITTEE

Medicare Contract Annual Renewal

Doctor Jarrett reported that the Medicare committee recommends to council that we renew the Medicare contract (#DA-49-007-MD-806) for the period March 1, 1959, to Feb. 29, 1960, as it was only renewed (as modified) for a six months period earlier. The fiscal agent reports that since the new Medicare regulations have gone into effect, there have been no items of friction or difficulty with the participating physicians; that the physicians are somewhat unhappy at the way the military is handling dependents' care, in that many of them are being flown to San Francisco and to Texas for medical services whereas it is available locally. The point in renewing the contract is, those dependents whose husbands or whose principals are overseas, can obtain medical care from local physicians without the necessity of being certified by the military. For that reason, they thought it would be in the public interest to go ahead and renegotiate this contract.

It was moved, seconded, and unanimously carried that we accept the report of the Medicare committee.

COMMUNICATIONS

*National Foundation — Health Scholarships —
Arizona Representative*

The National Foundation, 800 Second Ave., New York 17, N. Y., by letter dated Nov. 20, 1958, signed by Thomas M. Rivers, M.D., vice president for medical affairs, invited the Ari-

zona Medical Association to nominate a maximum of three physicians from whom one will be invited to serve as a member of the state committee, associated with its expanded program of medical scientific research, patient aid and professional education through health scholarship awards covering four years to qualified people in the fields of medicine, nursing, physical therapy, occupational therapy, and medical social work.

Doctor Manning selected members of the benevolent and loan fund committee: Doctors Ernest A. Born (Prescott), Leslie B. Smith (Phoenix), and Preston T. Brown (Phoenix), as this association's nominees. Action approved.

American Cancer Society and Arizona Tuberculosis and Health Association

Letters from (a) Arizona Tuberculosis and Health Association, Inc., O. J. Farness, M.D., president, dated Dec. 8, 1958, and (b) Arizona Division of the American Cancer Society, Arthur J. Present, M.D., president, dated Jan. 13, 1959, were presented and read, each expressing interest in promoting legislation establishing suitable qualifications and salary for a state health commissioner, and seeking the support of this association.

It was moved, seconded, and unanimously carried that this be referred to the legislation committee for review and recommendation to council.

Medical School Committee — Board of Regents — Survey Contribution

Council in meeting held Nov. 23, 1958, authorized a contribution of \$1,000 to the Arizona State Board of Regents in support of and to help defray the costs of a proposed survey to determine the needs and potential of medical education in Arizona.

Evelyn J. Kirmse, president, Arizona Board of Regents, by letter dated Dec. 31, 1958, expressed in behalf of the board its thanks and sincere appreciation for this financial co-operation and generous offer. It was advised Doctor R. S. Poor is now in the state for the purpose of setting up plans for a study (not to embark upon the study itself); further, inasmuch as it is the opinion of the board that it is the intention of this association to contribute to the cost of the survey, it will not move to accept the offer at this time. The matter has been referred to its medical school study committee of which Mr. John Babbitt of Flagstaff is chairman, and we will hear

from him at a later date. Received and filed.

AMA Regional Medicolegal Meeting

It was reported that the AMA Regional Medicolegal Meeting is scheduled to be held April 17 and 18, 1959, in Salt Lake City, Utah. Members of the association are cordially invited and urged to attend. Received and filed.

Pima County Medical Society — Industrial Commission of Arizona vs.

Sanley S. Tanz, M.D.

J. D. Heim, M.D., secretary-treasurer, Pima County Medical Society, by letter dated Jan. 15, 1959, addressed to Leslie B. Smith, M.D., secretary of this association, advised:

"This letter refers to a letter addressed to you under date of Sept. 3, 1958, by Stanley S. Tanz, M.D., concerning an experience with the Industrial Commission of Arizona, who transferred a patient from his care to that of another physician. This matter was referred by you to the industrial relations committee of the Arizona Medical Association, and then, by letter dated Sept. 11, 1958, referred back to the Pima County Medical Society.

"Report on this case was received from Pima County Medical Society's industrial relations committee by our board of directors on Jan. 8, 1959. This report was accepted and approved by the board of directors, and I am directed to forward a copy of it to council of the Arizona Medical Association.

"The board of directors of the Pima County Medical Society feels very strongly that this type of handling is a flagrant example of interference with the doctor-patient relationship, and a gross invasion of the right to the individual to choose his own physician. It feels that a strong protest, at the highest level, should be made to the industrial commission of Arizona. It also feels that consideration should be given to the possibilities of revising the existing legislation, so that, in the future, neither the employer nor the industrial commission of Arizona might be able to order a man to change his physician when there is no question of medical or professional failure of proper care for the patient."

Doctor Beaton stated: "This sort of thing is perfectly legal under the terms of the Industrial Commission Act. When I was chairman of the industrial relations committee, we made representatives to the commission about this kind of high-handed procedure. They kind of promised they wouldn't do it, though they reserved unto

themselves the right to do it if they wanted to. We also asked the legislation committee to look into legislation which might change this portion of the act and nothing ever came of it. The Pima County Society is exercised about this and wants council to take some action about it. The only thing we can do would be to write a letter saying this has come to our attention and we strongly deplore it and trust that it won't happen again. I think we might also strongly present to our industrial relations committee that they discuss this matter with the industrial commission to see that things of this sort do not happen in the future.

It was moved, seconded, and unanimously carried that we write the industrial commission deploring this arbitrary interference in the physician-patient relationship without adequate medical reason; and secondly, that we instruct our industrial relations committee to discuss this matter with the claims department (industrial commission) with an eye to preventing its occurrence in the future; and thirdly, that we ask our legislation committee to look into this matter with an eye to possible revision of the Workmen's Compensation Act.

Poisoning Control Committee — Appointment — Director, Arizona Poison Control Program

Virginia M. Cobb, M.D., chairman, poisoning control committee, by letter dated Jan. 13, 1959, expressed the desire of her committee to designate Doctor Albert Picchioni, as director of the Arizona poison control program and sought consideration thereof by council.

It was directed that the committee be advised that we (council) feel it is proper for the committee to designate Doctor Picchioni, if it so wishes, but that we assume he will remain under the surveillance and control of the committee.

AMA — Proposed Establishment of State Committees on Rehabilitation

A supplementary report of the board of trustees before the house of delegates of AMA on "Proposed Establishment of State Committees on Rehabilitation," presented by Doctor Hamer, was read to council and directed referred to the professional board.

OTHER BUSINESS

Cancer Reporting Legislation —

Jesse D. Hamer, M.D.

Doctor Hamer reported on the status of proposed legislation referable to reporting con-

tagious and neoplastic diseases to the State Department of Health stating: "The attempt to change the wording of the amendment to the Public Health Code has not been effected as yet, but it probably will be within the next week.

"It appears, the greatest difficulty lies in keeping files in relationship to the 'case number' when the death certificate comes in; the number will not be on the death certificate, and that will entail a great deal of work to determine what number matches the name on the death certificate to terminate the case. Mr. Wise, director of vital statistics, Arizona State Health Department, is not totally satisfied with the proposed revision, in that he wants several changes made, and so, the thing is nebulous at the present time."

Doctor Hamer recommended and council agreed that a poll of council be taken, by mail, to approve or disapprove this proposed legislation, when completed by Mr. Trask, in accordance with the wishes of the state health director.

Legislation — Doctors of Osteopathy

The executive secretary alerted council to the anticipated introduction of legislation by the osteopathic group, amending their act to provide, among other things, for the privilege to license doctors of osteopathy to practice medicine and unlimited surgery in Arizona. Presently, such doctors are restricted to undertake "major" surgery until they acquire an additional permit after two years of surveillance. In this regard, the legislation committee hoped to get an expression of council opinion relative thereto prior to calling a meeting of the committee.

It was directed that we (council) instruct the legislation committee to meet, consider these matters, and if there are any that require an immediate expression of council opinion, to take a mail poll; otherwise, to inform the legislation committee that council will have its regular meeting to consider legislation in approximately one month, at which time, routine matters may come before it.

A Priceless Gift to Posterity — Blue Cross-Blue Shield

An article entitled: "A Priceless Gift to Posterity" was presented to council, prepared by the Blue Cross-Blue Shield organizations at the request of the ministry dealing with the importance of an autopsy. Its views and comment were invited and sought.

It was moved, seconded, and unanimously

carried that we approve of and compliment them on the article.

National Casualty Insurance Company — Eligibility Supplemental Endorsement

The National Casualty Insurance Company of Detroit proposed that all first time applicants for membership in the component county medical societies of this association (the insured), who are actively engaged in their profession or occupation when the insurance is to become effective and who have not reached their 65th birthday anniversary, shall be eligible for insurance under the policy; provided, that such insurance as may be placed in effect for the applicant shall automatically terminate on the date the application for membership is rejected or withdrawn or at the end of one year of such insurance, if the membership application is pending at that time, and the unearned portion of the premium from the date of such termination shall be refunded.

It was moved, seconded, and unanimously carried that we accept this proposed endorsement to the policy (as an additional benefit).

Fee and Contractual Medicine Committee — Industrial Fee Schedule

The fee and contractual medicine committee in meeting held Dec. 14, 1958, in anticipation of a meeting to be held in February with the Industrial Commission of Arizona for the purpose of renegotiation to acquire an equitable schedule of fees for industrial care cases, determined upon the following plan of action, subject to council approval:

"The committee proposes to offer and stand firm on the current Medicare schedule of fees and if this is not acceptable to the industrial commissions, that all doctors be advised to bill industrial commission cases at their usual, normal fee for services rendered; and

"Should the industrial commission request additional time for study of the program, the committee will be agreeable only on a 500 factor for the duration of the study; and

"That legal counsel of The Arizona Medical Association, Inc. be in attendance at our meeting in February; and

"That renegotiations with the industrial commission be scheduled annually, the fee schedule to be attached to a cost-of-living index and revised on a change of 5 per cent or more."

It was also reported that two official letters

from the association were forwarded to the industrial commission on Dec. 16, 1958 and Jan. 7, 1959, requesting the commissioner's preference as to a dinner-meeting date in February 1959. No response has been received to date.

Leo L. Tuveson, M.D., chairman, industrial relations committee, in collaboration with Hayes W. Caldwell, M.D., chairman, fee and contractual medicine committee, forwarded today to council the following additional recommendation:

"That we state to the industrial commission that they be considered as a private insurance carrier, since it has a monopoly and by law practice insurance carriers must charge premiums in excess by 10 per cent of those charged by the industrial commission; and

"Recommend that Council recommend to the fee and contractual medicine committee that doctors be allowed to charge their regular fees."

It was moved, seconded, and unanimously carried that we give the fee and contractual medicine committee the authority to act as set forth in their letter of Jan. 14, 1959, with the addition of the subsequent information from Doctor Tuveson and Doctor Caldwell; and that the committee be requested to confer with Mr. Jacobson (legal counsel) prior to the meeting with the industrial commissioners; and when the commissioners agree to a meeting date, council authorizes the expenditure of association funds to cover a dinner-meeting.

Constitution and By-Laws — County Medical Society Charters

Doctor Manning requested the constitution and by-laws committee to get started again on the age-old problem of charters for each component county medical society.

It was determined that this action await installation of the new articles and by-laws.

Central Office Advisory Committee — Clarence E. Yount Jr., M.D.

Doctor Yount requested clarification of council action taken at its meeting of Nov. 23, 1958, as regards the association sponsorship of Blue Cross-Blue Shield coverage and premium payments for central office staff employees.

It was moved, seconded, and unanimously carried that association sponsorship of Blue Cross-Blue Shield coverage include the employee and dependents, when the employee is the head of the house and sole support of the dependents; otherwise, to be provided for the employee only,

based on employe income derived from the central office operations.

Meeting adjourned at 5:52 p.m.

LESLIE B. SMITH, M.D.

Secretary

PROFESSIONAL LIAISON COMMITTEE

Agenda

DOCTOR Steen reported that the meeting had been called at the request of Doctor Gamble, chairman of the inter-professional committee of the Arizona Chiropractors Association, to discuss the following agenda:

"The purpose of requesting an audience with the Arizona Medical Association's inter-professional liaison committee is to seek advice and counsel regarding four issues of concern. We would like to present these issues as topics for discussion so that your committee may extend recommendations to the Arizona Medical Association for consideration.

"1. We recommend that legislation be framed to prohibit the use of shoe fitting fluoroscopes by lay, unlicensed personnel.

"2. At a joint conference of the American Medical Association and National Association of Chiropractic officials two years ago, arranged by President Allman of the AMA, the field representative of the AMA, Mr. Tom Hendricks, stressed the importance of acquainting medicine with modern chiropractic-podiatry through liaison on the state association level. An exhibit shown at this meeting was approved for display at state medical association conventions. We would like the privilege of presenting this exhibit at the coming Arizona Medical Association state convention.

"3. There is a shortage of chiropractors to service the ever mounting foot problems of the population throughout the entire United States. We solicit the interest and help of Arizona medical doctors in recommending chiropractic as a career to those young people who seek your advice concerning the healing arts and who are non-specific in their primary interest. Two years of pre-medical college work of proper grade level will satisfy the academic chiropractic entrance requirements. Chiropractic training requires four years of chiropractic college and a program of internship.

"4. As a result of a fine degree of co-operation,

inclusion of chiropractic service has been consummated in many of the Blue Cross-Blue Shield plans throughout the nation. No provision is made for such participation in the State of Arizona. It is the request of this committee that the inter-professional liaison committee of the Arizona Medical Association advise us concerning the development of chiropractic service inclusion within the framework of Blue Cross-Blue Shield contracts in the State of Arizona.

"We would like to point out highly successful operations of chiropractic inclusion in the states of Delaware, Michigan, Oklahoma, and in the District of Columbia. In these instances, the medical society has set up a special participating clause for chiropractic. The chiropractic associations have provided adjudication committees to help service any problems that might arise so that our profession shares in the supervision and work of the operation. Inclusion does not increase the scope of coverage of contracts, but would authorize chiropractors to be eligible to service conditions now qualified for indemnity.

"*Summation:* The propositions offered for consideration are indicative of the desire of the chiropractic profession in Arizona to assume responsibility in the public health interest commensurate with acceptable chiropractic-podiatry training and standards."

FLUOROSCOPIC SHOE FITTING LEGISLATION

Doctor Snyder elaborated on the problem of shoe fitting with the use of X-ray or fluoroscopes by lay persons, stating that, "the National Association of Chiropractors recently recommended that state societies (chiropractic) take action against the use of X-ray and fluoroscopic devices in shoe stores due to the hazards of excessive radiation to foot growth, among other things."

Seventeen states in the United States currently have such restrictions either through legislation, or regulation by public health departments.

It was further pointed out that this is not too

frequently a problem in Arizona at this time and such action would be more of a "prophylactic" measure.

The Arizona Chiropractors Association would like to proceed with it, but would like the sanction of the Arizona Medical Association; or, the Arizona Medical Association should proceed with it; or more specifically, the legislation committee of the Arizona Medical Association should proceed with it in co-operation with the Arizona Chiropractors Association.

It was moved, seconded, and unanimously carried that council be informed that the professional liaison committee believes that point to be well taken and recommends that this problem be referred to its legislation committee with the recommendation that they work with a like committee of the Arizona Chiropractors Association to sponsor such legislation.

CHIROPODISTS EXHIBITS AT STATE MEDICAL MEETINGS

As a means of acquainting the doctor of medicine with the standards and practices of the doctor of chiropody, a request was made for

exhibit space at the next annual meeting of the Arizona Medical Association. It was determined that such exhibit would require an 8' x 8' space allotment.

SHORTAGE OF CHIROPODISTS

The problem of a shortage of chiropractors was discussed with the chiropractors soliciting the co-operation of doctors of medicine in suggesting this field to those young people who may be inquiring about careers in the medical arts.

CHIROPODISTS — BLUE CROSS- BLUE SHIELD PARTICIPATION

Doctor Kohl pointed out that the doctor of medicine is not included in Blue Cross-Blue Shield plans for office procedures and until such is the case, there would be no reason or precedent to push such coverage for chiropractors.

Doctor Gamble stated that they were more interested in hospital coverages in that there are chiropractors working in regular hospitals.

It was recommended that this desire be referred by the chiropractors to Blue Cross-Blue Shield for consideration.

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COMMITTEE ON POISONING CONTROL

THE REGULAR quarterly meeting of the committee on poisoning control was held at the College of Pharmacy, Jan. 9, 1959.

A film, "One Day's Poison," was shown and was recommended by the committee for showing to lay groups. It can be obtained from the State Health Department by writing to Mr. John Nelson; Health, Education Division, State Health Department, Phoenix, Ariz.

The committee felt that a member of the faculty at the College of Pharmacy should be designated as "director" of the poison control program in the state. A letter requesting that Doctor Albert Picchioni be so appointed has been sent to Doctor Smith of the State Medical Association.

There was considerable discussion about reporting of poison cases. There are certain hospitals in the state that have never sent in any reports at all. Others return very inadequate reports and some make very good ones. The best reports are the ones filled in by the attending physician and the committee felt that the filling out of the forms should not be left to the record room clerk. The physicians in Pima County are being urged to fill out the forms themselves and return them promptly to the Poison Control Information Center at the College of Pharmacy.

During 1958, the Poison Control Information Center has supplied a card index file to 18 hospitals in the state and to the Maricopa County

Medical Society. These files are kept up to date by the Poison Control Information Center.

The College of Pharmacy publishes a monthly letter in *Arizona Medicine* giving statistical information on poisoning cases and information on new developments in the field of poisons.

The College of Pharmacy has developed complete liaison with the National Clearing House for Poison Control.

Preliminary discussion was started on a poison control exhibit for the annual meeting of the Arizona Medical Association and a letter has been sent to Doctor Smith requesting space for an exhibit.

The 18 hospital poisoning control treatment centers which have received the card files are listed below according to the cities in which they are located:

Ajo, Phelps Dodge Hospital; Douglas, Douglas Hospital; Flagstaff, Flagstaff Hospital; Ganado, Sage Memorial Hospital; Grand Canyon, Grand Canyon Hospital; Holbrook, Holbrook Municipal Hospital; Kingman, Mohave County Hospital; McNary, McNary Hospital; Phoenix, Good Samaritan Hospital, Maricopa County General Hospital, Memorial Hospital, and St. Joseph's Hospital; Prescott, Prescott Community Hospital; Safford, Safford Inn Hospital; Tucson, Pima County General Hospital, St. Mary's Hospital, and Tucson Medical Center; Yuma, Yuma County General Hospital.

Doctor Frederick Beckert has replaced Doctor Paul Jarrett on the poisoning control committee.

BARROW NEUROLOGICAL INSTITUTE FOR ARIZONA

In Memory of
WILLIAM E. BARROW

THE LARGEST gift of its kind to a private hospital in the history of Arizona was announced Saturday, Jan. 24, 1959, at a special meeting at St. Joseph's Hospital of the medical council, department of neurology and neurosurgery, department of psychiatry, Dr. Clarence Salisbury; director of public health, Dr. James W. Kernohan, professor of pathology, Mayo Foundation, Rochester, Minn., Dr. Edwin Boldrey, professor of neurosurgery, University of California Medical Center, San Francisco, and president of the American Academy of Neurological Surgery, Charles A. Barrow and son, Tim. The gift of

the Barrow family, when matched with federal and other grants, will exceed \$1 million which will be used to construct and develop a neurological institute for St. Joseph's Hospital. There are only four other such institutes of this kind in the United States and Canada. This addition to the hospital is a memorial to William E. Barrow, father of Charles A. Barrow, who had been coming to Arizona for the past 40 years.

Sister Mary Placida stated that this new wing will be known as the Barrow Neurological Institute. Approximately one year will be devoted to working out the physical facilities of the

institute, to increase the neurological research fund, and to assemble top-flight researchers. She also announced that the board of directors of St. Joseph's Hospital had appointed Dr. John R. Green, presently chairman of the department of neurology and neurological surgery at St. Joseph's Hospital, as director of the Barrow Neurological Institute. A national advisory board of consultants and a regional lay board for the subsidy of neurologic research is planned.

The Barrow Neurological Institute will be an L-shaped structure, connecting to the central portion of the hospital. It will have a basement, four floors, and plans for future expansion. The new wing will have its own entrance on Third Ave., near Catalina Drive.

Sister Mary Placida thanked Mr. Barrow on behalf of the Sisters of Mercy, the medical staff of St. Joseph's Hospital and the community which the institute will serve for making possible this important addition of medical facilities to this area. She added that this was a big step in making Phoenix an outstanding medical center in the Southwest. Mr. Charles A. Barrow has been interested in neurology and neurological surgery for a number of years and has been closely identified with St. Joseph's Hospital for six years. During this period of time, he has made possible the seizure clinic, the laboratory of electroencephalography, the radio-active isotope laboratory, the neuro-pathology laboratory, the medical photography department, as well as neuro-surgical instruments and special equipment. Most recently he has provided instrumentation which makes it possible for the neurosurgeons to do blood vessel surgery of the brain under hypothermia. The institute is a natural outgrowth of these interests and it will be patterned after the few similar organizations now in existence. Existing neurological institutes in the United States and Canada are now located in Chicago, New York, Washington, and Montreal.

Dr. Green commented as follows: "I cannot begin to express our appreciation to Mr. Barrow and to St. Joseph's Hospital for their vision and desire to create such an institute. Statistical analysis of the work done by the neurologists and neurological surgeons of Phoenix in our department during 1958 indicates this is already a clinical neurological center of much importance to the Southwest. At present, there are 117 hospitals in the United States with training facili-

ties for neurological surgeons, and our service at St. Joseph's Hospital has a larger volume than 90 of them."

"The purposes of the Barrow Neurological Institute," Dr. Green added, "are three-fold: (1) A center specializing in the diagnosis and treatment of hospitalized patients who have various organic disorders of the nervous system, (2) a center for basic research into the causes of nervous and mental diseases and to develop improved methods of treatment, and (3) a center for the training of neurologists, neurological surgeons, and research workers in this field."

The neurological institute will initially have 50 beds for hospital patients, clinical laboratories for neuro-pathology, neuro-roentgenology, and electro-encephalography, its own specially constructed surgeries connecting to the present recovery room, as well as research laboratories for neuro-physiology, neuro-chemistry, and electron-microscopy of normal and abnormal tissues. Dr. Green added that "The clinical side will be an extension of the existing services, and the research activities will be carried on by full-time investigators who in turn will be subsidized by the neurologic research fund which we must further develop. We have been assured that our research workers, who will be full-time at the Barrow Neurological Institute will receive complete co-operation and collaboration from the basic science departments of Arizona State University, and this will be mutually beneficial."

Two nationally famous specialists who were in Phoenix to take part in the cancer seminar of the Arizona Cancer Society at Paradise Inn were interested guests at the meeting Saturday afternoon and had previously indicated their willingness to serve on the national advisory board of consultants for the Barrow Neurological Institute. Dr. James W. Kernohan, professor of pathology, Mayo Foundation, Rochester, Minn., world-renowned neuro-pathologist, remarked: "This is an occasion that will long be remembered in this area of the United States. I am naturally most happy to be present and to see the further growth of neurology, neurosurgery and their basic branches. The resurgence of these branches of medicine and surgery is due in general largely to the actions and support of the Institute of Neurology and Blindness of the National Institute of Health.

"The generosity of the Barrow family has made this project possible and St. Joseph's Hospital

is to be congratulated on this new development."

Dr. Edwin Boldrey, professor of neurological surgery, University of California Medical Center, San Francisco, and president of the American Academy of Neurological Surgery, commented: "It is indeed a great pleasure to learn with you of the presentation to your community of the Barrow Neurological Institute. Phoenix, the State

of Arizona, and the entire Southwest are most fortunate to have this opportunity to participate in and support, as well as profit by, a venture to add to the general fund of knowledge concerning the nervous system and its infirmities, and to improve the already high standard of medical care provided in your city."

THE THIRD PARTY PROBLEM

By D. J. Heim, M.D.

The Tucson Clinic

Tucson, Arizona

WITH THE advent, growing significance, and power of third-party participation in the field of medicine the time is long overdue for a calm appraisal of the evolutionary changes which are encroaching upon the traditional concepts of medical practice. Bitter recriminations and possible chisms have been engendered within the medical profession as a result of failure to recognize the gradual transformation third-party participation has produced in our relations with many of our patients. The time-honored concepts of "free choice of physician" and the "fee-for-service" philosophy have had to be modified to fit the newer situations which have arisen subsequent to the promulgation of these respected, fundamentally sound principles. Modification does not mean abandonment. In those instances where the direct physician-patient relationship exists as it did when these principles were formulated certainly there is no question of free choice of physician or fee-for-service. Fortunately or unfortunately, all the ramifications of the direct physician-patient relationship are no longer present when a third-party has a "valid interest" in the payment of medical expense.

What is meant by the "third-party" as referred to in this discussion? Simply expressed it is any person or organization, other than the physician or patient, who is responsible for the cost of medical care of certain designated individuals. In this country typical third parties are governments (national, state, county, or city as represented by veterans administration and military hospitals, state, county and city hospitals and various government sponsored health plans) insurance companies, railroads, unions, and industries.

The fields of misunderstanding among phy-

sicians regarding third-party participation arise from several considerations. Among these are:

(1) A failure of leadership and direction by the American Medical Association coupled with over-enthusiastic misguided disciplinary action by several state and county medical societies.

(2) A belief that policies and practices of some of these third-parties are contributing to unethical practices in medicine.

(3) An impression that the "free choice of physician" principle has been abrogated by these third-parties and the participating physicians and therefore such conduct threatens the very foundations of medical practice as traditionally known in the United States.

(4) A fear that adoption of standardizations of medical and surgical fees, as is frequently requested or demanded by these third parties, will lead to indirect control of the physician's fee-for-service principle to which organized medicine has long been committed.

The evolutionary changes in medical practice are but one facet of the complex philosophical alterations our society is undergoing. The national quest for security at any cost has already forged the chains of socialistic slavery. Our inexorable drift in this direction must be used as a backdrop in interpreting the changes in traditional thinking which organized medicine is making. The socialistic trend has developed so rapidly that its effects upon the medical profession's relations to society require astute interpretation by organized medicine. This interpretation has frequently had the appearance of hind-sight rather than fore-sight. The American Medical Association in its efforts to chart a correct course for the medical profession has often procrastinated unduly leaving its component societies to formulate their own policies.

Such seems to have been the case where third party participation is involved. Without the forceful guidance of the American Medical Association, the component state and county elements have attempted to establish their own principles to fit this ever growing segment of medical practice. Lacking leadership some of these elements have turned to tradition, the eternal pull of the past. The concepts of "free choice of physician," unethical aspects of "closed panel systems," and "fee-for-service" have been exploited in the light of ancient resolutions or statements of the American Medical Association, or they have been interpreted to fit particular situations from vague references attributed to the same source. Some of the source material was formulated prior to the time the third party element had developed any importance. Application of this material to today's problems hardly seems consistent. A principle (a settled law or rule of conduct) is formulated on known facts. The introduction of new facts must alter the application of the principle even though the principle is unchanged. As the Judicial Council of the American Medical Association has stated: "basic ethical concepts do not change (but) interpretations of ethical concepts may change with increased knowledge and fuller understanding." (1) Some of the component societies of organized medicine in efforts to maintain the high standards of medical care in the United States have attempted to control participation in these third-party plans by their individual members. With but nebulous guidance from the American Medical Association some of these efforts have come dangerously close to coercion and intimidation. These efforts have been directed along two lines: ethical and/or legal. Specific instances include:

(1) Efforts to have the Commonwealth of Kentucky outlaw closed panel systems (2) with punitive measures against such systems and participating doctors. Fortunately cooler heads in the Kentucky legislature prevented passage of such a law.

(2) A ruling by the Colorado State Medical Society in May, 1957 clouding the ethical reputation of "any Colorado physician who knowingly and willingly participates in, or aids and abets the operations of, a medical plan which denies its beneficiaries the right of free choice of physician . . . (3). An injunction has been filed in the Denver District Court against this ruling

and, at this writing, it appears that it will be declared illegal.

(3) The Belmont County Medical Society denied membership to three Ohio physicians who were employed by the United Mine Workers' medical program. No reason was given for the denial.

(4) On January 26, 1958 the Council of the Arizona Medical Association adopted the recommendation of the Fee and Contractual Medicine Committee "that the physicians throughout Arizona be apprised that in accordance with this principle of medical ethics (i.e. the 1927 Report of the Judicial Council with regard to "free choice of physician" (4) they not join any medical program that excludes the other members of the local county medical societies from caring for patients employed by any given employer or agent under accepted conditions for insurance payment of the fee." (5)

(5) At the 1957 Clinical Session of the House of Delegates of the American Medical Association the Colorado delegation introduced a resolution stating that any contract with a third party would be unethical if "a reasonable degree of free choice of physician is denied those cared for in a community where other competent physicians are readily available." (6)

There is ample, practically unanimous, judiciary evidence (7) that contracts between third parties and designated physicians are not illegal if the third parties are subject to legal scrutiny at the state or federal court level. Since the American Medical Association was once successfully prosecuted under the Sherman Anti-trust Act it is doubtful whether this organization will ever be placed in that position again. Consequently it has not formally supported any of the state or county medical organizations which have intimated or designated such arrangements are illegal or unethical. Expulsion, the threat of expulsion, or the denial of admission to a medical society based upon such a premise affords the offended physician the opportunity of redress under the federal or state anti-trust laws. Since so-called closed panel systems are legal according to the law of the land, medical organizations attempting to coerce or expel members or refuse admission to physicians having such contracts are on very shaky ground.

Implied or direct accusations that third party medical care arrangements with designated physicians are unethical could be disposed of by

stating that nowhere in the revised Principles of Medical Ethics (June 1957) can such an interpretation be given. Neither is there any reference to "free choice of physician." Intelligent appraisal demands further consideration since the revised Principles contain only a Preamble and ten short paragraphs. Under Chapter VII, Section 4 of the 1955 edition of the Principles of Medical ethics is the following statement: "free choice of physician is defined as that degree of freedom in choosing a physician which can be exercised under usual conditions of employment between patients and physicians. The interjection of a third party who has a valid interest, or who intervenes between the physician and the patient does not per se cause a contract to be unethical. A third party has a valid interest when, by law or volition, the third party assumes legal responsibility and provides for the cost of medical care and indemnity for occupational disability." In plain simple language a third party has the right and privilege to say where its medical dollars are going when it voluntarily assumes the cost of its participants' medical care. This is legal. It is also ethical unless:

- "(1) The compensation received (by the participating physicians) is inadequate based on the usual fees paid for the same kind of service and class of people in the same community.
- (2) The compensation is so low as to make it impossible for competent service to be rendered.
- (3) There is underbidding by physicians in order to secure the contract.
- (4) A reasonable degree of free choice of physicians is denied those cared for in a community where other competent physicians are readily available.
- (5) There is solicitation of patients directly or indirectly.(8)"

Since these five points were a re-affirmation in December 1957 of a 1927 Report of the Judicial Council of the American Medical Association they may be subject to reinterpretation in the light of more recent developments. This applies especially to Point 4.

On June 7, 1958 the American Medical Association published a special edition "The Principles of Medical Ethics, Opinions and Reports of the Judicial Council." On page 8 is the statement: "the phrase 'free choice' of physician is more and more frequently used and there is a general understanding of what the phrase means. Actually no person can have an absolute free choice

for many reasons, and if his freedom of choice is not absolute then it is not free but limited." Contrary to the Judicial Council's bland statement there is not "general understanding of what the phrase means." Witness the following comments from the "Report of Officers to the Members of the House of Delegates of the American Medical Association":

- (1) "The American Medical Association lacked a clear-cut definition and policy with regard to 'free choice of physician', and a uniform approach to all third parties. . . . was necessary.(9)
- (2) "In view of the fact that the term 'free choice of physician' as used in various statements and as used alone, out of context, has resulted in misunderstanding and misinterpretation, it might be desirable to avoid use of this term in the abstract and to speak instead of the conditions under which physicians should dispose of their services and their responsibilities and conduct in the rendition of medical care."(10)

It is a dereliction of duty for physicians in positions of authority in organized medicine to carelessly toss about such cliches as suppression of "free choice of physicians" and the evils of "closed panel practice" unless and until all the facts regarding the particular subject under scrutiny are known. Yet these terms have been distorted by some doctors until they are left with the connotation of something unethical to many poorly informed members of the medical profession. Such a meaning is far from the truth and formal resolutions implying or stating that such practices are unethical cannot tolerate legal scrutiny or be substantiated by the Code of Ethics of the American Medical Association.

It is understood, of course, that abuses and unethical behavior are just as possible within the framework of third-party arrangements as within any other facet of medical practice. The potentiality of such abuses, per se, should not taint this growing segment of medical practice with unethical stigmata however. County, state, and national medical organizations must effectively police this segment of their ranks, but illegal or unethical accusations are the wrong approach. Some of the restrictive measures applied by certain third-party factions such as closed panels, fixed fees, ostracization of certain physicians, regulations without prior consultation or participation of medical societies or doctors, and the building of closed-staff hospitals might have

been avoided or modified if our organized groups had promptly prevented exorbitant charges, poorly conducted or prolonged treatments, slipshod or unreported records, and unnecessary surgery. There is the growing feeling among many lay groups and among some third-party organizations that some physicians are less interested in their patients' medical welfare than the economic benefits to be derived from their bills.

Rightly or wrongly lay groups frequently interpret the fee-for-service principle of organized medicine as unjust. Such a principle is firmly entrenched in the traditions of the medical profession. Where direct physician-patient relationships exist, the principle must be upheld. With the intervention of third party participation, alterations in the application of the principle have met professional resistance and bitter denunciation at times. The inconsistency of the resistance is illustrated by the rather general acceptance of fee schedules from such third party organizations as government hospitals, state industrial insurance companies, Blue Cross and Blue Shield plans and Medicare. Yet attempts by other third party participants to have organized medical societies establish reasonable fee schedules have oftentimes met failure. The reasons offered for such resistance vary but all stem from an innate fear that such concessions will result in medicine's loss of control of the fee-for-service principle with possible domination and eventual dictation by lay groups. The members of the medical profession are highly individualistic and abhor the idea of lay control over their economic activities. The establishment of fee schedules by third parties only makes such control a little less inevitable in many a professional man's mind.

As many third party organizations can testify, attempts to adapt third party plans to the traditional fee-for-service practices of doctors on a free choice of physician basis often have led to abuses necessitating abandonment of these traditional principles. In efforts to place such programs on an actuarial basis so that adequate reserve funds can be accumulated these third party organizations have requested acceptable fee schedules. In those instances where such co-operation from organized medicine on the state or county level has been withheld or refused, these plans, in self-defense, have turned to closed-panels, self-built and self-administered

hospitals and clinics, and/or self-imposed fee schedules.

It must be remembered that the growth of such third-party plans as private health insurance carriers, Blue Cross and Blue Shield plans, industrial health programs, and union and industry sponsored health plans has been encouraged by organized medicine as a bulwark against socialized or state medicine. They need our co-operation and support as much as we need theirs. While the objectives of some such plans can be honestly criticized at times, by and large their intentions are honorable and they anxiously seek aid from the medical profession in solving their problems. The superior attitude of some medical societies in facing such problems can only serve to antagonize third party participants. No longer can the issues be avoided by hiding behind pious platitudes of "fee-for-service" medicine, "free choice of physicians" and non-interference by lay organizations. These organizations do not want to interfere or intrude upon the professional and technical aspects of the practice of medicine. They do want to have a voice in administering their plans and since they are responsible for the cost of medical care of their recipients they have the privilege of demanding reasonable fee schedules. In these days of uniform fees for services and goods in spite of a person's economic status it seems somewhat incongruous for the medical profession to have a sliding scale of fees when other than the patient is paying for the medical care. Of course, such fee schedules must be determined on an equitable basis and must be subject to change with changing conditions such as rise in the cost of living and inflationary trends. Arbitrary dictatorial changes in these schedules by third parties can certainly be effectively controlled by refusal of organized medicine to participate in their plans particularly if they are subject to periodic scrutiny and re-affirmation. However if the climate of co-operation and understanding between third parties and organized medicine were more favorable it is doubtful if these third parties would adopt antagonistic policies. Third party participation in the economics of medicine is here to stay regardless of the attitude of organized medicine.

SUMMARY

A third party in the medical field is defined as any person or organization other than the physician or patient who is responsible for the cost

of medical care and indemnification of designated individuals.

The growing importance of these third parties has caused evolutionary alterations in the traditional ethical principles of the medical profession. In this evolutionary process some component elements of organized medicine have shown reactionary tendencies in wrongly interpreting the ethical behavior of their members who have participated in certain of these plans. The great weight of legal evidence will not allow such interpretations to be binding upon these members. Impending and threatening legal action combined with a beginning crystallization of opinion of the American Medical Association as expressed in the "Report of the Commission on Medical Care Plans"(11) necessitates altera-

tions in the concepts of "free choice of physician," "fee-for-service," and "closed panel practice" when applied to third party participation in medicine.

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LARSON REPORT — THIRD PARTY

AAPS EXTENDS congratulations to the American Medical Association on the decision reached at its December, 1958 Minneapolis meeting to defer action on the so-called Larson Report because of the scant two weeks time the delegates had had to study the 117 page report. . . . It is the opinion of this observer and other more experienced observers, after hearing the hostile reception accorded the Report in comments before the Reference Committee, that any recommendation other than deferring would have resulted in overwhelming rejection of the Larson Report by the House of Delegates. . . . The "Larson Report" presents the results of a 3½ year study by a Commission of 13 physicians and two laymen, authorized by the American Medical Association Board of Trustees on November 9, 1954. . . . The Commission was headed by Dr. Leonard W. Larson of Bismarck, North Dakota. . . . Its recommendations, although couched in carefully chosen words, are an open invitation to third party interventionists to take over control of medical care. . . . The recommendations — sometimes merely implied — hint for a re-appraisal of the value of "free choice" and almost place the art and science of medical practice in the category of a "public utility" with medical care to be regimented by those untrained in the art and science of medicine — the "third parties."

The purpose of the Commission was: "To determine whether current medical care plans are effectively promoting (1) the highest quality of health service, (2) the welfare of the public and

the medical profession, and (3) the ethical standards of the medical profession."

The Commission's findings downgrade "free choice" in this fashion: "In the closed-panel, direct service type of plans visited, the Committee has uniformly observed care of good quality being made available to patients who do not have 'free choice of physician' in the literal sense of the term. . . . Based on its observance, the Committee finds that the absence of 'free choice of physician' does not necessarily result in inferior care; but the Committee in no way intends to state that good quality medical care was rendered in these plans because of the absence of 'free choice'." . . . This is double talk. . . . One would be blind to believe that all closed-panel practice fails to provide some good medical care. . . . Likewise, there are some exceptions to the provision of good medical care by way of private practice. . . . Yet the records show indisputably that America reached its "medical greatness" through private practice. . . . The logical question is "How much better would have been the care of that patient if he had been treated under a system of private practice, rather than in a closed-panel?"

This section of the Report is summarized as follows: . . . The medical profession is determined to maintain the highest possible standards of medical care. . . . Freedom of choice is an important factor in the achievement of this goal" . . . After establishing an incomparable medical care record under the American system of pri-

vate practice — of which “free choice” is one of the vitally essential parts — “freedom of choice” is now only “an important factor in the achievement of this goal.”

We believe we are justified in discussing the “findings” of the Larson Report. . . . If approved by the profession’s parent scientific organization, they will have a far-reaching effect upon every patient or potential patient in the United States — as to the type of medical care he will be “permitted” to receive. . . . They could become the deciding factor in determining the type of medical care physicians will be “permitted” to deliver to their patients. . . . Should a majority of American physicians, through their parent body, approve the Larson Report, it would become known as one of the black days in the history of American medicine (ranking with the elevation of FSA to HEW).

One of the most serious problems facing the medical profession today is the entrance of the “third party” into the practice of medicine. . . . There is an overwhelming amount of historical evidence in other countries and in the United States to prove unequivocally that medical care deteriorates when the “third party” enters because it is most difficult to limit the third party’s interference only to the payment of fees. . . . Yet, the Commission’s conclusions are almost apologetic for the shortcomings of third party plans. . . . The statements are made, “Physicians are entitled to practice medicine without lay interference”; and a tap on the wrist warning is given “they (third party plans) should provide the beneficiary with the widest possible choice of physician as stated in the paragraph Plan Members”: “they should refrain from interference with patient-physician relationships and should prevent lay interference with the practice of medicine”. . . . This milk-toast statement denies the ageless fact that he who pays the bill will designate the tune and how to play it.

Exposure of the Report to the public comes at a most opportune time for third party interventionists (Medical Economics printed a story about it in its January 5, 1959 issue, pages 185-207). . . . Many medical societies and individual physicians are embroiled in controversies with the United Mine Workers Fund. . . . Many of the statements made in the Report place termites in the foundation of the historically recorded and substantiated base that the best medical care is

provided through private practice and that the highest quality medical care cannot survive under “third party” interference.

The Commission was handicapped because its assigned subject was a negative approach for physicians. . . . The greatness of the quality and quantity of medical care delivered to the American people was achieved long before most of the “plans” and “third parties” came into being. This “greatness” was accomplished under the system of private practice with each patient having free choice to choose his physician, placing his faith in his physician, and with the physician being personally and morally responsible to his individual patient and without interference from any untrained outside source. . . . The American people receive more and better medical care than the citizens of any other large nation in the world. . . . Hindsight suggests that the Commission could have devoted its efforts more intelligently and effectively — and should have — to revealing the many reasons why private practice has achieved this “medical greatness” in America and how we shall meet the challenge of “the control of medicine from inside lest it become a toy of administrators who cannot produce, budget or assign personal integrity, skill, and devotion to a sick person” (William B. Bean, M.D., Prof. of Internal Medicine, University of Iowa — GP, January, 1959, Page 138).

We believe the Commission was created out of honest motivations. . . . We are confident that the members of the Commission and the large staff of lay employees, worked diligently, honestly, and conscientiously. . . . We fear that somehow, and at some place, a fast talking medical regimentist or oily tongued administrator hoodwinked the Commission into becoming “medical apologists” — a seemingly popular current trend pursued by some medical leaders.

One of the conclusions reached by the Commission is: “The majority of the plans do not have medical representation on their policy-making bodies” (this is not earth-shattering news to any informed ethical physician) . . . “However, their governing boards seek the advice of physicians in various ways before making decisions which involve medical policy” . . . This is meaningless. . . . It is the equivalent of the “come-on” written into so much federal legislation to the effect: “An Advisory Council will be appointed to ‘advise’ the ‘Secretary’ (bureaucratic czar of

the program)" . . . But the legislation never requires the bureaucratic czar to accept the recommendations of the "Advisory Council" . . . Neither are the "plans" nor the "third party" obligated to accept medical advice from physicians. . . . In fact, the opposite is almost invariably true. . . . Ask any physician who has served under the directive whip of third parties — the Armed Services Medical Corps, Veterans Administration, Medicare, and any type of closed-panel practice — and he will tell you that he had to practice medicine, not always as he believed it should be practiced, but in accordance with the rules and regulations laid down by a "third party."

Physicians believing in the importance of county medical societies will be discouraged when they read Section II of the Commission's Report. . . . This deals with "Laws Relating to Miscellaneous Type Plans" . . . We don't dispute the legal findings nor the legal decisions reviewed in this Section. . . . However, they seem to make it apparent that county medical societies are practically impotent in the matter of disciplining members for participating in schemes for the distribution of medical care that, in the opinion of the society, are considered unethical. . . . The reasons given are that the courts might rule that society disciplinary action was in "restraint of trade or interference with business" . . . How about the restraint engendered by closed panels?

The old indictment of the AMA is reviewed briefly, undoubtedly, as a warning to medical societies. . . . The indictment was caused by the AMA's opposition to Group Health in the District of Columbia. . . . According to the best legal advice we have received over the years, we do not believe this is applicable to physicians who, motivated by their moral responsibility to their patients, refuse to have anything to do with closed-panel plans. . . . A man has a right to decide whether or not to do business or associate with another man. . . . A group has the same right. . . . Labor unions work on the same principle and the Supreme Court has upheld them many times. . . . The AMA was indicted, apparently, because it was determined not only to boycott Group Health and its adherents which would have been lawful, but to punish others who dealt with Group Health as well, which is unlawful.

The discouraging and downright depressing views expressed in this "legal" Section are certain to put fear in the "bravest of medical societies" . . . Someone has said that a good attorney is one who takes the positive approach and tells you how far you can go honestly and legally . . . Since the Report was compiled by physicians, we believe that emphasis should have been placed on this area. . . . If we have the best medical care in all of the world, primarily due to "free choice" and the system of private practice, a physicians' Commission would be reasonably expected to tell doctors how they can legally protect and preserve that finest system of medical care, rather than pull the rug of legal confidence out from under them. . . . No other group is going to look after the interests of physicians and their patients. . . . Physicians should devote more of their activities to determining and promulgating the "whys" of America's superior medical care. . . . The task of finding the legal pitfalls should be left to the labor bosses, hospital and "plan" administrators, and others who seek to control the practice of medicine. . . . Let them do their own "hoeing" — and not have it done by a medical Commission.

There is a glaring omission in the so-called "legal" Section of the Report. . . . No mention is made of non-participation by the individual ethical physician in plans that are contrary to his concepts of how good medical service should be delivered. . . . If we have achieved quality medical care in this country under a system of "free choice" and private practice that defies worldwide comparison (the record shows that we have), the honorable method for ethical physicians to save the system is a simple one. . . . It is the ethical and morally responsible plan of non-participation. . . . It is a plan that is devoid of legalistic entanglements. . . . It means that ethical physicians voluntarily agree with each other (no medical society action is required) not to participate in schemes of bad medical care which are contrary to the public interest. . . . It signifies that ethical physicians propose to exercise the same privilege and right as they do when they refuse to work or associate with medical quacks. . . . It means further that ethical physicians will never withdraw their services from their rightful employers, their patients, but refuse to become the medical slaves of a would-be usurping employer — a government agency,

a plan administrator or a labor boss — because they know that in doing so, they would be recreant to the welfare of their patients.

Although action on the Larson Report was deferred, this ill-advised document is not dead. . . . It will be placed before the AMA Delegates at their meeting in Atlantic City next June for approval or disapproval. . . . As the nation's physicians become acquainted with the Larson Report, we are confident that at least 70% of them will concur that vastly too much of it was devoted to espousing the cause of plans and third parties — in reality, potentially a most dangerous enemy to the retention of quality medical care. . . . But don't under-estimate the strength the "enemies" have already rallied. . . . According to the article in the January 5, 1959 Medical Economics, an unnamed "AMA insider" declared "Don't ever forget it that the U. S. Supreme Court once upheld a criminal conviction of the AMA for violation of the anti-trust laws. . . . The AMA Trustees are never going to let that happen again. . . . If you look back over the last few years, you'll observe that they haven't been backing any of these wild men in the State Associations. . . . Those fellows are fighting a losing battle against closed-panel plans. . . . Medicine's got to make peace with labor and with all kinds of adequate prepayment plans. . . . The alternative is government compulsion."

We disagree completely with the unnamed "AMA insider" . . . The decision referred to in the AMA case, as we have pointed out, has nothing to do with physicians of integrity, honor and ethics, voluntarily agreeing with each other not to participate in what they consider to be bad plans of medical care. . . . Medicine does not have "to make peace" with labor or any other group because only physicians can deliver medical services. . . . The alternative is not "government compulsion" . . . The Constitution and Bill of Rights protect physicians against "government compulsion" . . . In fact, every federal socialized medicine bill introduced into the Congress has provided that "physicians are free to participate full time, part time, or not at all" . . . So long as the Constitution is honored, physicians are free as to how they shall dispose of their services.

Not intended as such, the Larson Report is given rousing support by Dr. Norton S. Brown, President of the New York County Medical Society, in another article printed in the aforementioned issue of Medical Economics. . . . Dr. Brown is quoted: "Medicine used to be a private concession operated by doctors for doctors. . . . It's becoming a 'public utility' operated by doctors in co-operation with other segments of society" . . . He states that doctors "need to change their ideas . . . especially their ideas on 'third parties,' 'free choice,' and 'socialized medicine'" . . . "Complete rugged individualism is no longer workable," he says. . . . His definition of a public utility is "a private enterprise so vital to the public interest that it has to have some supervision" . . . Dr. Brown is no doubt sincere in his convictions. . . . Yet, it is this type of expressed "conviction" that is making medical practice a pawn of "third parties"; denying God-given rights of patients; enslaving physicians and destroying their initiative to use their medical knowledge and skills to the best of their abilities; and inviting "supervision" by those who know utterly nothing about what is best for the patient.

The Larson Report and Dr. Brown's statements focus attention on a decision that must be made quickly by the nation's doctors. . . . Do they enroll under a tried and proven system of free choice and private practice, a system responsible for delivering the finest medical care in all the world? . . . Or, do they enlist on the side of those who have been coerced or frightened into experimenting with a system of medical care that has been a dismal failure in other nations? . . . Those in the first group will be upholding the freedom of the physician and the patient and their moral responsibility to each other. . . . Those in the second group will be delegating the physician-patient mutual responsibility to a "third party" . . . We believe the time has come for physicians to choose "their group" . . . There is no middle ground. . . . Principles are not divisible.

Mal Rumph, M.D.
President

AMERICAN MEDICAL ASSOCIATION NEWSLETTER

KEOGH BILL OUT OF COMMITTEE, NOW AWAITS HOUSE ACTION

The Keogh-Simpson bill was favorably approved by the house ways and means committee and the way cleared for early floor action. As it emerged from committee, there were no amendments, thus the bill is identical with the version that passed the house last year and died in the senate.

The bill would allow the self-employed, including doctors, to set aside 10 per cent of gross adjusted income up to \$2,500 when paid into retirement plans. Maximum set aside in any lifetime would be \$50,000. Leader in the campaign for enactment is the American Thrift Assembly, of which the American Medical Association is a member.

One plan under discussion is for the bill to come up for floor action on suspension-of-the-rules day (first and third Mondays). The bill would not be subject to amendment from the floor. Twenty minutes of debate is allowed each side, and a two-thirds vote of those present is necessary for passage. Some house members, particularly the new congressmen, may want to be heard on the bill before it heads once again for the senate.

In the senate, meanwhile, the bill is gaining new supporters, giving hope that it may be acted on in that body this session.

ROBERTS OF ALABAMA HEADS HOUSE HEALTH-SAFETY SUBCOMMITTEE

Rep. Kenneth A. Roberts (D., Ala.) has been named chairman of the interstate committee's health and safety subcommittee, which handles a large portion of health legislation in the house. This includes public health and quarantine, food and drugs, hospital construction, safety, including highway traffic safety, air safety and air pollution. Mr. Roberts, beginning his 11th year in congress, conducted extensive hearings and studies of traffic safety in the past several years and may resume that interest. Other majority members: George Rhodes (Pa.), Leo O'Brien, (N.Y.), Paul G. Rogers (Fla.) and Lawrence Brock (Neb). Republicans: Paul F. Schenk (Ohio), Samuel L. Devine (Ohio), Ancher Nelson (Minn).

Other congressional notes — The defense department has sent to congress legislation proposing the extension of the \$100 per month special pay for physicians in the uniformed services, which otherwise would expire on June 30. . . . The administration has asked congress for \$2.44 billion more in supplemental appropriations to be used between now and June 30. About 10 per cent would go to HEW, for, among other things, \$168 million for public assistance grants, \$75.3 million for educational grants, \$1.8 million for building Indian health facilities and \$800,000 for PHS general assistance to states.

MEDICAL SCHOOLS WOULD SHARE IN NEW AID

The administration unfolded a plan for stimulating colleges and universities, including medical schools, to build under a 20-year, \$500 million program. It would work this way: Public colleges and universities, which can market tax-exempt bonds, would be offered grants equal to one-fourth the cost of construction, spread over the 20 years the loan was being repaid; private institutions would have their loans guaranteed by the government, resulting in a lower interest rate, in addition to receiving the same grant benefits. A current program for medical schools and other institutions is the Laboratory Research Facilities Act which distributes \$30 million a year for building research facilities looking into crippling and killing diseases. None of this money can be used for teaching facilities. Still under study in the administration is a grant program for construction of medical school teaching facilities.

SENATE HEARINGS ON INTERNA- TIONAL RESEARCH INSTITUTE

Chairman Lister Hill of the full labor and public welfare committee has proposed setting up an eighth institute at the National Institutes of Health, to be known as the National Institute for International Medical Research and to authorize \$50 million a year for research under NIH. The measure (SJ Res. 41) seeks, among other things, to encourage and support planning of essential research on a world-wide basis. The resolution has 57 co-sponsors, Democrats and Republicans.

FORAND INTRODUCES HOSPITALIZATION-SURGICAL SERVICES BILL FOR AGED

The 1959 version of the proposal to use the social security system to provide hospitalization and surgical services for those eligible for OASI benefits was introduced in the House by Rep. Aime Forand (D., R.I.) on Feb. 18. The bill (HR 4700) differs with his 1957 bill in several points. They include permitting surgical services to be performed by other than board-certified members. To finance the program, he would increase social security taxes, above increases already planned, by one-fourth of 1 per cent for both employee and employer and three-eighths of 1 per cent for the self-employed starting in 1960.

Mr. Forand conceded that among the strongest backers of his original bill, "there are some who question the feasibility of including surgical benefits at this time. This is one of the matters which the committee will want to weigh as it hears testimony." He said he intends to explore the possibility of (1) paying for diagnostic services, such as X-rays and laboratory tests, on an out-patient basis, and (2) including benefits for home nursing care through such responsible agencies as the visiting nurses' association, hospitals or local health departments.

He commented further: "The AHA has recognized the need for some type of federal action and has been exploring alternatives . . . the American Medical Association has also acknowledged the need for vigorous action along new lines and urged its member societies to explore and support private programs that will help to avoid federal legislation."

GOODWILL HOSPITAL SHIP TO VISIT SOUTHEAST ASIA

An exchange of correspondence between President Eisenhower and Dr. William Walsh, a practicing physician and president of the People-to-People Health Foundation, has formally launched a voluntary effort by doctors to spread goodwill in critical Southeast Asia through dispatch of a World War II hospital ship. Under the project, a staff of specialists recruited from among U.S. physicians and other medical personnel would be prepared to treat patients, to move into epidemic areas, and to conduct seminars with Far East doctors on modern methods of medical school training. Dr. Hugh Hussey,

dean of Georgetown University School of Medicine, and an AMA trustee, heads a curriculum committee.

The ship, the *Consolation*, is coming out of mothballs and will be loaned to the foundation; it will be away for a year. Rotating teams will fly out every three months. The AMA trustees have indorsed the plan and also made a cash contribution for initial organizing expenses. It is estimated that it will cost \$3.5 million to outfit and run the ship for a year; funds will be sought from private sources. The President, who first proposed more people-to-people contacts with other countries, said the project was a "wonderful thing" and he knew of no better way to serve the needs of humanity.

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SEVENTH INTERNATIONAL CANCER CONGRESS*

London, July 6-12

THE Seventh International Cancer Congress was held at the Festival Hall, London, from July 6 to 12, under the auspices of the International Union against Cancer. It was opened by the Duke of Gloucester and attended by 2,500 delegates from 64 countries. The president of the congress was Sir Stanford Cade, senior surgeon of the Westminster Hospital. The chairman of the British Organizing Committee was Dr. Ralston Paterson, and the secretary-general of the congress, Prof. R. W. Scarff.

The main part of our report consists of dispatches from five special correspondents each of whom reviews a principal subject of discussion. The program included plenary sessions on cancer control, hormones and cancer, carcinogenesis, and the chemotherapy of cancer; lectures by Prof. L. Bugnard (Paris), Dr. Charles Huggins (Chicago), Prof. V. R. Khanolkar (Bombay), and Prof. L. Kreyberg (Oslo); experimental and clinical group and sectional meetings; sessions arranged by the International Union; and many proffered papers.

Presidential Address

At the opening ceremony on July 7, Prof. J. H. Maisin (Louvain), president of the International Union, installed Sir Stanford Cade as president.

The purpose of the congress, said Sir Stanford in his presidential address, was to take stock of present knowledge on cancer, analyze the accumulated facts, and critically review the different opinions on debatable points. The organizing committee had chosen for consideration what he would term "the front-line advance in cancer research" and the most urgent, important, and promising clinical subjects. Picking out certain of these for comment, Sir Stanford noted the ever-increasing role of biochemistry in cancer research; the reasoned thought which was resulting in sounder surgical judgment — "the concept of cancer as a biological disturbance and not merely as a tumor has resulted in surgery being more selective, more discriminating, and serving perhaps a fewer number of patients but to a better purpose"; radiotherapy, which had achieved broader, safer, and more effective reaches of usefulness; and the development of chemotherapy, which alone, or in combination with surgery, or even as an umbrella against implantation of can-

cer cells during operation had widened the group of medicinal remedies against cancer. Hormonal regulation of cancer of the breast and prostate had made no longer tenable the belief that cancer is autonomous, uncontrollable, and independent of the normal physiological processes. There was a crescendo of progress from the cruder methods of surgical ablation, once the only weapon, to the more selective action of radiation, applicable to an increasing number of patients, the specific effect of chemical substances useful in a limited group, and the physiological methods of hormonal control in two sites.

Progress in early diagnosis was slow; it depended upon the doctor's awareness of cancer and the patients' belief that early advice was always to their benefit. Even prevention of cancer was not beyond the hope of achievement. Today cancer was indeed "captain of the men of death." It was the universal enemy of mankind. It called for a united international effort.

At the close of the congress, it was announced that the Eighth International Cancer Congress will be held in Russia in 1962. Prof. Alexander Haddow has been nominated president-elect.

I.—CARCINOGENESIS

In the field of non-viral carcinogenesis it is fair to say that no startling new advances were reported. After listening to a number of individual reports, and several general lectures and discussions, one was left with the impression that the various groups of workers in this field are less rigidly divided in their outlook than formerly. The point was made on several occasions that cancer may arise in many ways and that the common factor, if there is one, is to be looked for not in the properties of the agents, exogenous or endogenous, which produce it, but in the type of disturbance which they produce. This disturbance was variously described: a continually stimulated proliferation without the inhibition which normally follows seems its most general property. This may result simply from separation of tissue from its normal contacts, as in the connective-tissue tumors which develop close to plastic or metal sheets implanted subcutaneously in rats by Dr. and Mrs. E. T. Oppenheimer and their colleagues (New York), and others, or in pituitary glands implanted subcutaneously in normal mice by Prof. O. Muhlbock (Amsterdam), or merely by long-continued culture of

*Reprinted from the British Medical Journal July 19, 1958, vol. ii, pp. 156-161.

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(c) Continue weekly adjustments during first month of therapy until maintenance dose has been established. Adjustments below 250 mg. daily are best made in steps of 100 mg. (one 100 mg. tablet). The maintenance dose may occasionally be as low as 100 mg. (one 100 mg. tablet daily) or, rarely, as high as 1.0 Gm. (four 250 mg. tablets) daily. Do not exceed daily dose of 1.0 Gm.

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1. If patient is taking 40 or less units of insulin daily and gives no history of severe or "brittle" diabetic response, discontinue insulin and replace with DIABINESE as in The New Patient.
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tissues *in vitro*. Interference with one of the normal feed-back systems has a similar effect, as in the various cases of tumor development in endocrine glands produced by diversion of their secretions or removal of their target organs, as described by Dr. J. Furth (Boston) and Prof. F. Bielschowsky (Dunedin).

Mode of Action

That carcinogens often act not directly upon the cells which become neoplastic, but on some other tissue or tissues was the conclusion to be drawn from a number of different observations. Dr. H. S. Kaplan (San Francisco) developed this general theme. Of the examples of such action perhaps the most striking is one which he himself has described — namely, the development of lymphomas in normal thymus glands transplanted to thymectomized, totally irradiated mice. These tumors are sometimes of host, sometimes of donor, origin; in the latter case, carcinogenesis is certainly indirect, since the graft has not been irradiated. Some observations of Prof. J. W. Orr (Birmingham) brought further support for the hypothesis of indirect action.

In order to bring chemical carcinogenesis into line with this general scheme, various theories were put forward. That of the Madison, Wis., school was represented by Dr. C. Heidelberger and Dr. V. R. Potter. It assumes that carcinogens combine specifically with certain essential cell proteins, which are then eliminated from the cell. The loss is permanent, and results in uncontrolled growth. Exactly how, is not stated. Dr. Potter suggested a possible mechanism — namely, that a biosynthetic pathway might be stimulated by the deletion of a competing katabolic pathway. He and Dr. S. Weinhouse (Philadelphia) agreed that Warburg's theory that the carcinogenic change consists of an irreversible damage to the respiratory mechanism of the cell is no longer tenable. This is a highly speculative field; moreover, the main evidence on which the theory of specific protein deletion is based has been severely criticized, notably at this congress by Dr. D. L. Woodhouse (Birmingham), who showed that the case for specific union between carcinogens and cell proteins is not as firmly established as was claimed. Another criticism of a theoretical kind is that since the cellular change produced is heritable, it must involve nucleic acid, and, whereas it is known that transmissible "information" can pass from nucleic acid to pro-

tein, there is no evidence that the reverse procedure ever occurs. Those who use this argument conclude that the essential attack of a carcinogenic agent is on the nucleic acids, and that alteration or loss of proteins must be secondary or incidental, although quantitatively greater.

Another view, which is constantly reappearing in new forms, is that carcinogens increase the frequency of mutations, assumed to be occurring at a low rate in normal somatic tissues, which confer on the mutant cells a selective advantage in resisting normal growth controls. Sir Macfarlane Burnet (Melbourne) developed this theory, and expressed the opinion that the study of cancer as a problem in population genetics is likely to be fruitful.

The two-stage theory of carcinogenesis received rather less attention than in recent years. Prof. K. Setälä (Helsinki), who has previously reported a tumor-promoting action on mouse-skin of very large doses of certain commercial surface-active substances, described similar effects by specially synthesized substances of this class where the presence of impurities could be virtually excluded. These observations have caused concern for some years because of the increasing use of surface-active substances as detergents and as food additives. This concern is likely to be increased by Dr. P. Shubik's (Chicago) demonstration that one of these substances ("Tween 60") is weakly carcinogenic as well as tumor-promoting on mouse-skin.

Cancer of the Bladder

The debt which experimental research in this field owes to clinical observation, especially in industrial medicine, was freely acknowledged. The remarkable series of researches on bladder carcinogenesis by Dr. G. Bonser and her colleagues in Leeds and Dr. W. C. Hueper in Bethesda, U.S.A., all derive from observations of the high rate of bladder cancer in dye workers. Dr. Bonser and Prof. E. Boyland (London) emphasized that we now know enough about bladder carcinogens to make it reasonable to hope that we may be able to eliminate most of the potentially dangerous substances of this class from our environment, or to antagonize their action.

Etiology of Lung Cancer

Prof. L. M. Shabad (Moscow) described the great reduction in benzpyrene content of the atmosphere of a new industrial town in Russia (Angarsk) by improved methods of fuel combustion and smoke control.

Contributions to the tobacco-lung-cancer problem were numerous. Those who spoke on this subject appeared more willing than formerly to accept the possibility of multiple factors in the causation of lung cancers. Prof. L. Kreyberg (Oslo) stressed the importance, and also the difficulty, of accurate histological typing of lung tumors. His careful surveys provide a firm basis for detailed correlation between the frequencies of different kinds of lung cancer and exposure to tobacco, dusts, and other environmental conditions. The conclusion, previously suspected but now firmly established, is that only squamous and undifferentiated (oat-cell) tumors can be associated with smoking habits. Many puzzles remain: for instance, Dr. E. V. Cowdry (St. Louis) pointed out that histological changes often regarded as precancerous, such as squamous metaplasia, were at least as common in the trachea as in the bronchi, yet cancer is uncommon in the former, common in the latter. Some light relief from these serious, sometimes somber, deliberations was provided by Prof. P. R. Peacock's (Glasgow) film showing the gradual conditioning of fowls and other creatures to the practice, and apparent enjoyment, of cigaret smoking: no lung tumors have so far resulted. The application of tobacco tars to various animal tissues still gives widely differing results in different hands. While tumors have been produced with whole tar, and certain crude fractions, in several laboratories, no single constituent has so far been incriminated. The view that a combination of several constituents of tar are involved, possibly in conjunction with atmospheric pollutants, is gaining ground.

Dr. R. Doll (London) dealt with the criticisms which have been made of the statistical evidence, and concluded that a casual connection with smoking was still the most probable explanation of the observed facts. Prof. W. C. Hueper (Bethesda) stressed the possible role of metal dusts, not only in industrial workers, but also in the general population. Dr. E. L. Wynder (New York) has been trying to modify methods of cigaret manufacture so as to reduce the hydrocarbon yield on burning. This is an approach of considerable practical interest.

Radiation Hazards

The role of radiation in the etiology of human cancer also received attention. Dr. R. Doll pointed out that, although acute leukemia, monocytic

leukemia, and chronic myeloid leukemia are positively associated with previous exposure to irradiation, a similar association in the case of chronic lymphatic leukemia is uncertain. Both this speaker and Dr. R. H. Mole (Harwell) were of the opinion that there is no threshold dose below which irradiation is safe. Others were inclined to believe that a threshold exists in some cases, but all were agreed that it is hard to conceive an experiment or survey likely to establish this point with certainty. An interesting contribution in this field was that of Prof. N. Petrov and his colleagues from Leningrad, who reported the production of a significant number of bone tumors in monkeys by intramedullary implantation of radioactive substances, though these animals are highly refractive to the action of chemical carcinogens applied by this as well as other routes.

II.—VIRUS-INDUCED TUMORS

In the few years since the Sixth Cancer Congress in São Paulo, both the scope and the amount of research into virus-induced tumors have increased tremendously. Dr. L. Gross (Bronx, N.Y.) has very recently discussed the viral etiology of mouse-cancer in this Journal (July 5, p. 1), and it was unfortunate that illness prevented his participation at the last moment in this congress. For the center of greatest interest in the viral field was undoubtedly mouse leukemia and the other tumors produced by this virus or virus-complex.

Mouse Leukemia

Dr. Gross has now found that 50 per cent of young, adult C3H mice — of his "low leukemia" strain — develop leukemia after irradiation with 150-200 *r* per week for four or five weeks. Filtered extracts from such tumors were inoculated into newborn C3H mice; 11 per cent developed leukemia (at 13 months average age) and 5 per cent parotid tumors (at 10 months). Cell-free extracts of normal organs of healthy adult C3H mice inoculated under the same conditions gave rise to only 0.5 per cent leukemia (at 17 months) but also, paradoxically, 7.5 per cent parotid gland tumors (at 4½ months)—which therefore arose faster than in the treated group. Serial passage of the leukemia agents in newborn hosts was found to increase the potency to such an extent that older, suckling mice could be infected.

Since Gross's first reports in this field, a number of similar observations have been made. Prof.

A. Graffi (Berlin-Buch) and his colleagues are working with a mouse myeloid (chloro-) leukemia. The same agent was derived from a number of different, spontaneous mouse carcinomas and sarcomas — but carcinogen-induced sarcomas gave negative results. The tumor yield from the filtrates was dependent upon the age of the hosts at the time of inoculation; it fell from some 40-50 per cent between one day and 11 days to 22 per cent at three to four months. Splenectomy before injection of the filtrate reduced the number from 72 per cent in the controls to 8 per cent, but if the splenectomy was delayed for one to two months after inoculation, the tumor yield rose to 54 per cent. The filtrate appeared to contain a particulate agent with the properties of a nucleoprotein. It was not highly antigenic for mice, as hyperimmune mouse serum and rabbit anti-mouse bone-marrow antiserum gave no inactivation. Attempts to culture the agent on chorio-allantoic membrane appeared to be unsuccessful during the first 10 passages, but at the 11th passage, tumors were produced in 78 per cent of the inoculated mice.

A leukemia, serially transmissible by cell-free filtrates to adult mice, was described by Dr. C. Friend (New York). This disease, unlike those of Dr. Gross and Professor Graffi, is characterized by a very short incubation period of about two weeks. The agent is immunologically distinguishable from normal mouse spleen and serum proteins. Immune sera from rabbits and mice neutralize the agent's infectivity, but sera from mice with other types of transplantable or "cell-free filtrate"-induced leukemias, and sera from man, both normal and leukemic, do not contain neutralizing antibody. It is possible to immunize mice with a formalin-treated virus vaccine; 80 per cent of the animals given three intraperitoneal vaccinations resisted challenge with either virus or leukemic cells and remained completely free of the disease. A similar cell-free agent derived from the brain of a C3Heb mouse bearing a spontaneous leukemia, and inoculated intracerebrally or intraperitoneally into adult mice of the same strain, was reported by Drs. H. M. Schoolman, S. O. Schwartz, W. Spurrier, and P. B. Szanto (Chicago) to give a 70 per cent yield of leukemia.

Tissue Culture of Mouse Leukemia Agent

These agents are intriguing enough, but Drs. S. E. Stewart, B. E. Eddy, and M. F. Stanton (Bethesda) were able to culture a mouse leu-

kemia agent on trypsinized mouse-embryo mice. The supernatant fluids from such cultures contained an agent which produced multiple types of tumors in 60-100 per cent of newborn mice of two different strains. All tumor-bearing mice had pleomorphic tumors of the salivary glands, and many had up to eight other types of unusual primary tumors and lesions. The latent period between inoculation and tumor production varied from a few days to several months. Further, and yet more remarkable, this mouse-derived agent was not species specific. Tumors have also been produced in rats, rabbits, and hamsters. In the hamster — and for this animal it was not even necessary to use newborn animals — sarcomas of the heart, kidneys, and subcutaneous tissues were the commonest tumors, but many had also hemangio-endotheliomas of the liver and lungs. The agent was highly antigenic, and tumor induction in mice was completely inhibited by passive immunization with rabbit antiserum.

Two other, distinctive, approaches to the subject were described by Dr. R. Latarjet (Paris) and by Dr. J. Rygard (Copenhagen). The former has tested extracts of leukemic Ak mouse tissues in newborn isologous mice. The appearance of spontaneous leukemias in this strain was accelerated, and in a few cases various multiple malignant tumors appeared. The agent was resistant to enzyme digestion with proteases and nucleases, and preliminary results with inoculated purified nucleic acids from leukemic tissue suggest that these acids may have some influence on the tumor incidence. Dr. Rygard has found that some treatments which induce leukemia in mice also lower their resistance to infections, and has correlated this with a depression of phagocytosis as judged by the rate of clearance of colloidal radiogold from the blood. Furthermore, he found that two- to four-day-old mice also show a low blood-clearance.

In electron micrographs Drs. L. Dmochowski and C. E. Grey (Houston) and L. Gross (Bronx, N. Y.) claim to be able to identify the agent in the induced parotid tumors. While Prof. A. D. Timofejevsky (Moscow) reported that he and his colleagues have observed particles 40-80 millimicrons in diameter in a large proportion of human tumors. Fewer particles were present in normal tissues. There was some evidence that these globular virus like bodies could be culti-

vated, together with living tissue, on chorio-allantoic membrane, and they had a distinctive antigenic composition.

Mouse Mammary-tumor Agent

The mouse mammary-tumor agent was the subject of four communications. Dr. D. H. Moore (New York) correlated its physical and biological properties, and in an attempt to fit in all the evidence from filtration, irradiation, diffusion, and biochemistry was forced to postulate the presence in the milk of a particulate inhibitor intermediate in size between two different active forms of the virus. Dr. H. B. Andervont (Bethesda) has observed, within the past few years, the disappearance of the tumor agent from two female mice of the R III strain — i.e., mammary cancer was absent from their descendants. Current experiments are being directed to finding out whether the disappearance is a result of a change in the agent, in the mice, or both.

Dr. M. K. Deringer (Bethesda) produced a substrain (C3He) of strain C3H mice by transfer of fertilized ova from a C3H female to the uterus of a mated C57BL female. The young were nursed by their "foster-mother" until weaned. The new agent-free strain showed a very high incidence of hepatomas — 59 per cent in virgin females, 27 per cent in breeding females, 38 per cent in force-bred females, 54 per cent in stilbestrol-treated males, and 91 per cent in breeding males. Recent studies on the mouse mammary-tumor agent were also reviewed by Dr. J. J. Bittner (Minneapolis).

Viral Tumor of Monkeys

A new virus producing benign fibromatous lesions in rhesus monkeys was described by Dr. C. H. Andrewes (London) and his colleagues. A year ago at the West African Institute for Medical Research in Nigeria a rhesus monkey in an outdoor cage developed a rapidly growing nodule on the eyebrow. Within the next few months similar growths appeared on the face or limbs of 20 other rhesus monkeys and a baboon. Serial transmission studies showed that the pox-like virus produces large growths which spontaneously regress after about a month. The virus passed a 0.65 mugradol membrane, and smears from the growths showed abundant DNA-containing elementary bodies resembling those of vaccinia. Tissue cultures of monkey kidney could be infected and the virus multiplied, giving cytoplasmic inclusions and ele-

mentary bodies similar to those in the growth themselves.

Benign fibromas in Virginian white-tailed deer also have been investigated by Drs. K. R. Dumbell (Liverpool), R. Mangold and L. G. MacNamara (New Jersey), and R. E. Shope (New York). This filterable agent was transmitted experimentally to other deer. The incubation period was prolonged and the regression rate high. The few experimental growths that did persist eventually approached, in size and appearance, the naturally occurring ones.

Drs. P. Rous, S. Rogers, and J. G. Kidd (New York) transplanted metastatic tissue from the Shope rabbit carcinoma into newborn rabbits. Many tumors could be propagated serially, and extracts of some 50 per cent of them, inoculated into the hyperplastic skin of adult rabbits, gave a few typical papillomas, but no carcinomas. Papilloma virus antigen appeared, however, to be present in the transplanted tumors. A similar phenomenon was discussed by Mrs. M. L. Duran-Reynals (New Haven) and her colleagues. Cortisone treatment of rabbits with regressing methylcholanthrene-induced skin tumors brought about a reactivation, which reversed when the daily cortisone was discontinued. During the stage of active cortisone-induced growth, a filterable agent could be recovered which induced, both grossly and histologically, a papilloma-like lesion.

A number of interesting studies on filterable chicken sarcomas and leukoses — where a viral etiology is unquestioned — were also reported, but there is no space to summarize them here.

Future Research

In brief, one's immediate impression is that two main factors account for the great advances reported on the viral etiology of mouse cancers. The first is the use of new-born test animals. The second is the successful propagation of the virus in tissue culture. The latter procedure may result in a considerable augmentation of both virulence and titer. The former has an obvious corollary: that together with a search for new agents — and it may not be long before cell-free filtrates from human tumors will be shown to produce tumors in mice and hamsters — a close study should be made of the reactions of new-born animals to antigenic "insults" of this kind, and, in particular, to the possibility of the animal having acquired an immunological tolerance to a "latent" agent.

III. — IMMUNOLOGY AND IMMUNOGENETICS

Present attempts to discover immunological differences between malignant and normal cells may be expected to shed light on the etiology of cancer and perhaps also, in the future, on its treatment. Much experimental work in this field involves of necessity the study of tumors that can be serially transplanted, which in turn demands the use of pure lines of animals. Members of such inbred strains, like identical twins, have the same genic and antigenic constitution. Until very recent times, it was only from the mouse that such stocks had been raised, and this is why such extensive use has been made of this species.

Antigenic Changes in Cancer Cells

Recent hypotheses relate malignancy to the loss of cellular components which, it is postulated, are essential to the normal control of cell multiplication. On the other hand, the finding of *additional* antigenic components in virus-induced tumors is hardly unexpected. Their appearance in other tumors, whether indicative of virus action or not, raises distant therapeutic possibilities. For it is clear that tumors, unlike normal tissues, may survive and grow despite certain degrees of antigenic disparity between them and their hosts. In such experimental situations, passive and active immunization have been effected. In fact Dr. G. D. Snell (Bar Harbor) described such a procedure in his further analysis of the genetic factors influencing the transplantability of tissues in the mouse. He used paired inbred strains whose selected genetic (and hence antigenic) differences were too slight to cause the multiple rejection of grafted tumors. But prior immunization of one strain with the normal tissues of the other protected the host from otherwise fatal tumor grafts from the partner strain. He has used this method to investigate minor antigenic differences which would cause rejection of a skin graft for example, but which do not suffice to destroy genetically comparable tumor tissue.

Several investigators have attempted the production of antibody fractions directed specifically against tumor antigens. Dr. I. L. Spar and his colleagues (Rochester, U.S.A.), using a radioactive label, showed that such preparations when injected into tumor-bearing animals may be selectively taken up by tumor tissue. However, it was by no means certain that this occurs as a

result of the simple immunological reaction originally proposed. Be that as it may, the suggestion that such preparations may serve as carriers of radioactive or chemotherapeutic agents and bring about their concentration in the target cells is a hopeful one.

The acquisition of *new* antigens is not, of course, incompatible with *loss* of others. Dr. E. Weiler (Pasadena) demonstrated the disappearance of organic-specific antigen (antigen common to the species, but peculiar to a particular tissue) from the liver of rats during the evolution of chemically induced hepatomas and, similarly, from the kidney during the development of stilbestrol-induced renal carcinoma in the hamster. He has recently shown that this latter antigen is apparently lost within a very short time in tissue culture, probably after only a few cycles of cell division. He finds that these antigens are confined to normal liver parenchymal cells and normal renal tubular epithelial cells respectively — that is, to the cells from which these tumors arise. There is as yet no evidence that this loss is in any sense a casual rather than a secondary event, nor that it has any bearing on the changes, possibly allied to malignancy, which accompany the derivation of continuously propagated lines of cells from normal tissue in culture.

Serological Test for Tumor Antigens

Prof. L. A. Zilber and his associates (Moscow) have used an ingenious and sensitive technique for the detection of additional antigens in human and animal tumors (including a chemically induced hepatoma of an inbred strain of mice). Guinea pigs are sensitized to fractions of tumor tissue and later desensitized with comparable fractions of normal tissue. They are then challenged with the tumor fractions. Anaphylactic reactions denote residual sensitivity to antigen(s) absent from the desensitizing preparations. Their results with this and other methods lead them to recognize that the appearance of these new antigens may be accompanied by some loss of normal tissue antigen, but they at present differ from Dr. Weiler in their views on the extent to which organ-specific antigens are affected.

Reports by Prof. G. Klein and Drs. E. Klein and K. Bayreuther (Stockholm) indicate that other kinds of antigens may be suppressed. Their methods enabled them to detect variants from among the cell populations of sarcomas arising

in hybrid mice. By transplantation and other tests, they showed that, in some tumor-cell lines so derived, iso-antigens (cellular antigens present in some but not all strains of the species) are either lost or suppressed. This is in keeping with extensive previous work on the apparent loss of iso-antigens by tumors in the course of serial transplantation. It also draws attention to the heterogenous nature of tumor cell populations and the influence of intercellular variation and selection in the successive stages of their evolution toward increased autonomy. These workers made the striking observation that each new sarcoma displayed individual characteristics in the production of variants, although all were histologically similar and had been induced by the same dose of carcinoma in the same tissue of genetically identical mice. By contrast Drs. L. Sachs and M. Feldman (Rehovoth, Israel) support the view that in some instances tumors can acquire increased "antigenicity" in response to immune reactions, enabling them to neutralize the host's output of cytotoxic antibodies.

Interpretation Must Be Cautious

Some account of current misgivings is perhaps as important as accounts of current research. Dr. P. Grabar (France) pointed out the need, particularly important to etiological concepts, to distinguish between absolute and merely quantitative changes in tumor tissue. Dr. T. S. Hauschka (U.S.A.) and Dr. P. A. Gorer (London) both emphasized the difficulties in interpretation inherent in the use of long-established tumors of non-inbred animals: these are situations where antigenic incongruity may be present from causes unrelated to malignancy. The findings of Dr. I. G. Kidd (New York) are a warning against hasty immunological judgments. He observed the protective effect of antibody, prepared in rabbits against a mouse tumor, which he had coupled by azo-linkage with arsenic. In control experiments, mice were given arsenic linked with (presumably) immunologically inert protein such as horse globulin. Surprisingly, these combinations were also protective although the two constituents, unlinked, were not.

A purely pragmatic conclusion may be drawn from the introductory remarks of Dr. Hauschka. The possibility that in some instances at least the cancer patient possesses the means of immunological resistance — which, however (and perhaps in the nature of the disease), is effective — is supported by scant but convincing evi-

dence. If this should be confirmed it may be profitable to seek means of enhancing this resistance.

IV. — CHEMOTHERAPY

During the congress, some new types of potential anti-tumor drugs were described, but these still await clinical evaluation. In the main, modifications of established types of alkylating and antimetabolite drugs were reported. The clinical value of antibiotics and corticosteroids also received attention, but perhaps the most important discussions were those on how best to administer anti-tumor chemotherapy.

Modes of Administration

One topic that provoked a lively discussion was the use of chemotherapy as an adjuvant to surgery, the object being to limit cytemia and subsequent metastases. Professor P. Rubanyi (Budapest) advocated both pre- and post-operative treatment with mannomustine ("degranol") and had observed no interference with normal wound healing. Dr. R. Gross (Marburg) had used "B 518" as a post-operative measure, observing no depression of granulocytes below 2,000 or other undesirable side-effects. Dr. J. F. Binkley (Oklahoma) reported perhaps more equivocally in 19 years' experience of nitrogen mustard as an adjuvant to cancer surgery, whilst Dr. H. Sato from Japan showed, in an experimental paper, the complete suppression of metastases in mice by "nitromin" administration following the surgical removal of tumors induced by subcutaneous transplantation of ascitic hepatomas. However, in the discussion, interference with normal granulation and the appearance of abscesses during healing were reported in cases where excision of a bronchial carcinoma was followed by nitrogen mustard treatment.

The influence of combined radiation and chemotherapy on survival time after diagnosis in patients with Hodgkin's disease and chronic myeloid and lymphatic leukemia was analyzed by Prof. L. Heilmeyer (Freiburg). Cases treated with radiation alone survived longer (54.5 months) than those receiving combined radiation and chemotherapy (46.3 months). Those treated only by chemotherapy had the worst expectation (42.2 months). He made the point, however, that the cases receiving only radiation were, in the main, those with the least generalized condition. Dr. E. T. Krementz (New Orleans) described a method of giving a chemotherapeutic agent locally by regional perfusion

through an extracorporeal circuit. He isolates a limb by perfusing into the artery and out of the vein. As an example he described a patient with lymphangitic recurrence of malignant melanoma in the leg who responded well for seven months to phenylalanine mustard administered by this method.

Prof. L. Larionov (Moscow), said that with proper administration and early treatment very long remissions indeed could now be achieved with chemotherapy. He advocates working as close to the maximum tolerated doses as possible, starting chemotherapy early and before radiation, maintaining treatment at a level often determined from the patient's blood picture, and ceasing to be worried by a moderate leucopenia (2,000-3,000). He told of four leukemic patients, all active and well after nine to 10 years of maintenance chemotherapy.

Antimetabolites and Alkylating Agents

Among the new types was "kethoxal," described by Dr. A. Furst (Stanford). This ketoaldehyde, a potential antimetabolite in the Krebs's cycle, was active against Ehrlich ascites tumor in mice. Dr. F. A. French (San Francisco) said that the bis-guanyldiazones and bis-thiosemicarbazones derived from kethoxal-type compounds had similar activity. Dr. V. Riley (New York) had studied the reactions *in vitro* between diamines and a melanoma metabolite, dihydroxyphenylalanine. After demonstrating a specific oxygen-absorbing reaction, he went on to establish that the phenylenediamines are capable of inhibiting the Cloudman melanoma in mice.

Another new approach was that of Dr. M. B. Sahasrabudhe (Bombay). From an analysis of the role of pyridine nucleotides (PN) in the production of energy, and from the fact that a tumor continues to grow despite low PN levels, he concluded that a tumor derives its energy via an alternative pathway — the hexose-monophosphate oxidation. Interference with this metabolic pathway should be possible by thiophene-2:6-dicarboxylic acid, and this compound has, in fact, now been shown to inhibit growth.

Among new modifications of earlier types, the use of mannomustine was described by several Hungarian delegates. This chloroethylamine derivative of mannitol had proved much less toxic than other chloroethylamines. Prof. Rubanyi, as noted above, described its use in surgery, while Dr. A. Eckhardt, also of Budapest, reviewed its use in the treatment of ma-

lignant lymphoma and leukemia. An analogous compound, a bis-methane sulphony ester of mannitol (C.B. 2511), was reported by Prof. A. Haddow (London), and similarly it was much less toxic than busulphan, to which it is chemically related. From Moscow Prof. Larionov reported the synthesis and preliminary trials of a range of peptides of "sarcolysine," and he showed that changes in the peptide moiety were accompanied by variations in the behavior of the resultant drug toward different experimental tumors.

There was considerable interest in the 5-fluoropyrimidines — one of the more recent additions to the antimetabolite field — and both Dr. R. Duschinsky (New Jersey) and Dr. C. Heidelberger (Madison) reported experimental studies, especially with 5-fluorouracil. One of its biological effects was its incorporation as a nucleotide into a "fraudulent" nucleic acid. Another uracil antagonist reported by Dr. E. Frey (Bethesda) was 6-azauracil, but its high neurotoxicity marred its clinical trial. On the other hand, Dr. A. R. Curreri's (Madison) account of the clinical trial of 5-fluorouracil was encouraging. It had produced improvement in 13 out of 15 cases of mammary carcinoma and in five out of 18 cases of cancer of the colon and rectum. Hepatomas and ovarian tumors also responded.

Antibiotics and Corticosteroids

Whilst accounts of the earlier antibiotics azaserine and "DON" were noticeably missing, two clinical reports were given on actinomycin D. Dr. Charlotte Tan (New York) described responses observed in the treatment of 95 children and 15 adults with metastatic neoplasms. None of the adults showed any therapeutic response, but at near toxic doses objective responses lasting up to four months were observed in children with Wilms's tumor, neuroblastoma, and nephroma. Both Dr. Tan and Dr. S. Farber (Boston) told of the apparent sensitizing of radio-resistant rhabdomyosarcomas by combining radiation treatment with intravenous injection of actinomycin D. Dr. Farber also mentioned as promising a Japanese antibiotic, mytomicin.

The role of corticotrophin, cortisone, and prednisone in the management of chronic lymphatic leukemia was discussed by Dr. R. Bodley Scott (London), who pointed out that their usefulness depends on their ability to prevent hemolytic anemia by suppressing the auto-immune re-

action of erythrocytes. Dr. J. G. Freymann (Boston) maintained, however, that there was no correlation between the life-span of erythrocytes and corticosteroid response.

V. — CONTROL OF CANCER

Cancer control is an intricate business, depending for its success on an alert and well-educated professional group, a co-operative and informed public, and the availability of adequate diagnostic and therapeutic services. This point of view, put forward by Dr. J. R. Heller (Bethesda), seems reasonable when it is realized that cancer has risen over the past 50 years from the eighth to the second major cause of death in the United States, where it is now regarded as a national health problem. There the so-called "seven danger signals" of cancer are widely advertised, publications on cancer are freely available, and a regular annual check-up is advised.

Early Diagnosis

Prof. B. W. Windeyer (London) discussed the same problem as encountered in Britain. While he thought that much more could be done, he did not agree with all the measures adopted in the United States. The key figure in cancer control must be the general practitioner, and better control should follow better medical education. Education of the British public should be approached differently. Group surveys showed that delays in the patient attending were due to ignorance or fear, and slogans based on fear might well have an adverse effect. The most important prognostic factor was the biological behavior of a tumor, and, if the public were encouraged by misleading slogans to believe that early diagnosis must lead to cure, disappointment and a loss of confidence in the medical profession would result. Special cancer centers were only advantageous if enough pre-malignant lesions and early cancers were discovered at them to justify their extra cost; moreover, their provision might lead to a loss of confidence in the general practitioner, which would be extremely unfortunate. Public education was worth while. The aim should be to remove false ideas rather than to instill half-truths and inaccurate slogans. Cancer education should be considered part of a general program toward the betterment of the nation's health.

Dr. Ruth Graham (Buffalo) opened a discussion on exfoliative cytology. Its value in the

diagnosis of early cancer of the cervix depended on the population screened. It was reasonable, for example, to exclude women under 30 and Jewesses, and to concentrate on women with symptoms, those married before 20, and the lower social classes. The average yield over the United States was now 4.7 per 1,000 patients examined. Prof. H. C. McLaren (Birmingham) believed that expert technicians, treated as members of a team, were more than adequate for the work. He treated carcinoma *in situ* in young or pregnant women by conization of the cervix and careful follow-up, as this allowed normal parturition and a more radical operation could always be undertaken later if necessary. Dr. L. V. Ackerman (St. Louis) felt that cytological examination of the sputum was now so reliable that, if the test was positive, peripheral lung tumors could be removed by lobectomy without prior biopsy through the lung and the consequent risk of pleural implantation. Prof. J. B. Duguid (Newcastle upon Tyne) had found examination of gastric washings of great value in establishing the diagnosis of gastric cancer. Last year 850 patients were examined and 60 reported positive. All were confirmed at operation, and in four the growth was little more than microscopic in size; in only four cases was carcinoma missed.

Treatment of Bladder and Breast Cancers

Bladder cancer is increasing in frequency, and the suggestion that the main etiological factors are now known is most encouraging, making the disease in this respect similar to bronchial cancer. Whether either disease will prove preventable remains to be seen. The panel discussing the present-day treatment of bladder cancer covered most aspects of the problem. Mr. D. M. Wallace (London) thought the infiltrating lesion without fixation or widespread disease was the only really difficult therapeutic problem. Radioactive implants or supervoltage x-rays were usually indicated, followed by total cystectomy if necessary. Partial cystectomy was useful only if the disease was limited to a small area of the dome or the side of the bladder without involving the ureter. Dr. G. W. Blomfield (Sheffield) reviewed the place of radiotherapy. Dr. C. Franksson (Stockholm) described the construction of an artificial bladder after total cystectomy, which allows micturition through the urethra.

The treatment of breast cancer was covered in detail at one clinical group meeting and separately by several other speakers. The most notable features were the general acceptance of the limitations of surgery, an increasing confidence in the value of radiotherapy, and the failure to agree on the particular indications for any particular form of hormone therapy. Dr. C. D. Haagensen (New York) emphasized the need for careful case selection before embarking upon surgery. In his clinic they relied on the radical Halsted operation for patients in the early stage. Prof. D. W. Smithers (London) said the histological grading of the tumor was the most important factor in prognosis; others were its site, the age at onset, and mode of spread. Mr. R. S. Handley (London) described his most recent findings relating spread to the internal mammary chain and the prognosis.

Several speakers discussed the hormonal treatment of breast cancer. All differed somewhat, but all agreed that it was quite impossible to forecast exactly whether or not a tumor would respond to any particular measure. Dr. R. Luft (Sweden) had the impression that hypophysectomy was probably more effective than adrenalectomy. If a patient was premenopausal or not more than one year post-menopausal, he recommended oophorectomy as the first step, followed later by major endocrine surgery if necessary. Five years or more after the menopause,

simple oophorectomy was not effective and large doses of estrogens should be tried, with endocrine surgery later if needed. Androgens were not often indicated, and in his experience were effective only in 20 per cent of cases. Hypophysectomy induced a regression in about 50 per cent of cases. This subject was also covered by Prof. C. Huggins (Chicago) in his congress lecture; the experimental background was discussed by Sir Charles Dodds (London). The program of radiotherapy recommended by Dr. F. Baclesse (France) was generally accepted by all speakers as an effective method of treatment, but the impossibility of forecasting accurately the radiosensitivity of a particular tumor makes surgery the best hope for cure where the disease is strictly local.

Bronchial Carcinoma

Bronchial carcinoma remains a most depressing disease to treat, although it is true that radical surgery occasionally achieves an excellent result. Radiotherapy is almost entirely palliative. A remarkable series of cases, however, was reported by Dr. Gwen Hilton (London). She has treated 38 carefully selected patients by radical radiotherapy alone, and eight of them have lived for 15 years with no recurrence. This result is all the more important when it is realized that all cases in the series were classed as operable. Her figures may therefore be compared directly with those of surgery.

TOBACCO INDUSTRY GROUP ANNOUNCES RESEARCH GRANTS

A NEW \$500,000 appropriation for scientific research sponsored by the Tobacco Industry Research Committee was announced by Timothy V. Hartnett, committee chairman.

Mr. Hartnett said the new appropriation increases to \$3.2 million the amount provided by the industry group for research grants made upon recommendation of the Scientific Advisory Board to the Tobacco Industry Research Committee.

The scientific advisory board has full responsibility for research policy and programming for the Tobacco Industry Research Committee. All grants are made upon recommendation of the board to independent scientists working in recognized research institutions, hospitals and universities.

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EARLY CLINICAL MANIFESTATIONS OF COLON AND RECTUM*

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BETWEEN seven and 16 per cent of cancers occur in the colon and rectum. In the Connecticut tumor registry 1935-1949 the incidence was 16.4 per cent of all cancers. A large proportion of cancers in this location are curable if removed soon after the appearance of first symptoms. Indeed the overall cure rate of colonic carcinoma exceeds that of cancer at any other site in the alimentary canal.

In order to discuss the early clinical manifestations, it was decided to review the proved cases seen at the Graduate Hospital from 1936 to 1958. A total of 418 records have been analyzed. A number of others were not available for review in the brief time available to us after knowing of the assignment. It is unlikely that these omissions will modify the statistics presented, since the series is rather large.

Antecedent or Precursor Lesions: One cannot adequately discuss early clinical manifestations without referring to certain antecedent lesions or precursors. In this group the incidence of antecedent or possible precursor lesions is 9.8 per cent. A careful search for polyps to account for bleeding from the rectum is becoming increasingly rewarding. A history of previous single polyp had been noted in 4.8 per cent and of multiple polyposis in 1.4 per cent of our series of cases. The pathogenetic significance of multiple and familial polyposis as precursors of carcinoma is generally recognized. Many experts claim that carcinoma of the colon will eventually develop in all patients with familial polyposis (Black and Hansbro; Coffey and Brinig; and Lewkowicz and Joseph). In recent years, emphasis has been given to the influence of chronic ulcerative colitis on the occurrence of colon cancer. The incidence of antecedent ulcerative colitis was 0.96 per cent, corresponding closely to that given by Strenstrom and Ford (0.72 per cent). Two and six-tenths per cent of

patients had been operated upon for previous carcinoma of the colon.

Age and Sex — Carcinoma of the colon and/or rectum may occur at any age. Ninety-four per cent of this series were 40 years of age or more and 82.5 per cent were 50 years of age or beyond.

There was no striking sex differences in the incidence of occurrence — 206 were of the male and 212 of the female sex.

Anatomic Site of Lesions — For purposes of classification and of study of clinical and pathologic configurations, it is customary to discuss the features of the disease, based upon the anatomic location of the lesion. It should be mentioned that 75 per cent of lesions were in the rectum and sigmoid, where the great majority of them could be visualized by ordinary proctosigmoidoscopic examination. In the discussion of the clinical aspects of colonic carcinoma it is customary to divide the cases into three categories, i.e., (1) lesions of the rectum, (2) those occurring in the left colon, including the part from the midtransverse colon down to the rectosigmoid junction; and, (3) lesions of the right colon. Since the anatomic characteristics and functions of these three segments differ, one may anticipate that clinical behavior patterns also differ, based upon the part involved.

The right colon has a wide lumen so that obstructing symptoms do not occur early. Indeed, unfortunately the pathologic process may be far advanced before any symptoms appear. Costello found 44 per cent of right colonic lesions to be so far advanced that a curative resection could not be undertaken. The order of importance of clinical symptom configurations of lesions of the right colon, based on previous reports, are often given as: (1) pain, (2) anemia and weakness, (3) tumor mass and finally, symptoms of obstruction (Cattel, McKenzie and Colcock).

The growths occurring in the sigmoid as well

Presented before the American Cancer Society, October 1958.
*This project was supported in part by the Bockus Research Fund, Inc., and by the Julia M. Keim Fund.

as those in the midtransverse colon and distal thereto (excluding rectum) are included under the designation "left colon," and comprise, in most reported series, approximately one-half of all malignant growths in the colon. In this part of the colon, the lumen is more narrow and the normal colonic content is formed so that obstructive symptoms and change in bowel habit are often of most significance. In the order of importance, many observers arrange the symptoms as follows: (1) change in bowel habit, (2) pain and/or obstructive symptoms and (3) gross blood in stools (Shallow, Wagner and Colcher).

In the rectum, the usual order of symptoms arranged according to incidence and importance in reported series of cases is: (1) bleeding, (2) sensation of incomplete evacuation and change of bowel habit, and (3) rectal pain and tenesmus.

Delay in Diagnosis — In many previous reports on colon cancer, the analysis has included statistics dealing with reasons for delay in diagnosis. In the series of Shallow, et al., there was a delay of over six months in approximately 25 per cent of cases attributed to the patient, and of from 5.3 to 11.7 per cent of cases (depending on site of lesion) attributed to the physician. In the Remington series of 210 private patients, the average delay in diagnosis was seven months. This was attributed to the patient in 48 per cent and to the physician in 31 per cent of patients.

Our data are broken down insofar as this is possible. Actually the delay attributable to patient was over six months in 23 per cent of rectal cases, in 19 per cent of patients with lesions of the left colon and in 17 per cent of patients with right colonic lesions. This record is somewhat better than that of some previous reports. Furthermore it does not reveal a greater time delay in the right-sided lesions that is recorded in most previous series. Physician delay in the establishment of the diagnosis is considerable. It is practically identical regardless of site of lesion, averaging a delay exceeding six months in about 28 per cent of patients. In computing total delay, regardless of cause, we are confronted with figures that are not heartening. In approximately 45 per cent of all cases, regardless of site, a delay of more than six months occurred between the appearance of the initial symptom and the establishment of the diagnosis.

We were interested in determining whether the diagnosis was made earlier in patients seen in more recent years. For this purpose the cases

were grouped into three periods, i.e., 1936-'45, 1946-'50 and 1951-'58. It will be seen that patients admitted during the period 1951-1958 fared better than those admitted between 1936-1945. This briefer time interval for the establishment of the diagnosis was reflected in patient alertness, physician awareness and overall reduction of percentage of cases in which more than six months elapsed between first symptom and establishment of the diagnosis. The greatest reduction in percentage delay was noted in the establishment of the diagnosis by the physician.

Mistake in Diagnosis — Prior surgery for relief of pain evidently due to the cancer had been carried out in 20 patients or 4.7 per cent of series. This included appendectomies (7), pelvic operations (4), herniorrhaphies (3), an operation for hydrocele and one for diverticulitis of the descending colon.

SIGNIFICANT FIRST SYMPTOMS

Abdominal Pain or Discomfort — Pain or discomfort of some type was recorded in 327 of 418 patients (78.2 per cent). The importance of pain as a symptom in relation to the site of neoplasm is recorded. It was present as a symptom of neoplasm of the right colon in 89 per cent, of the left colon in 83 per cent and of the rectum in 65 per cent of cases. Of most significance it was a first symptom in 76, 41 and 24 per cent of neoplasms of the right colon, of the left colon and of the rectum respectively. Furthermore pain was the chief complaint in 63, 29, and 13 per cent of patients with lesions of the right colon, of the left colon and of the rectum respectively. These figures correspond in a general way to those of others. Pain is the most important and earliest symptom in right colon neoplasms and has great importance as well as an initial and chief complaint in lesions of the left colon.

The site of pain is analyzed on the basis of location of the lesion. The location of pain is somewhat variable, but percentage-wise, there is the type of general relationship between pain site and position of the growth, which one would anticipate. It is of interest that only 11.6 per cent of right colon lesions and 17.0 per cent of left colon lesions were without pain. The analysis of pain is continued in Table X. The cramping, colicky type of pain is the most common variety in lesions throughout the colon and particularly in lesions of the right and of the left colon. The

intensity of the pain in relation to site of growth is also recorded. Average for intensity of pain throughout the colon could be recorded as moderate. Pain of greater intensity occurred somewhat more often in lesions of the right colon. Radiation of pain was not very frequent. It occurred in 28 of 174 instances of sigmoidal neoplasms, usually to the back. In 15 of 139 lesions of the rectum, radiation to the lower abdomen was mentioned. In neoplasms elsewhere in the colon, radiation of pain either was rare or was not recorded.

Temporary relief of pain by the expulsion of flatus or by defecation is to be anticipated in many patients with neoplasms of the rectum and of the left colon.

Blood in Stools — This constitutes one of the most important early symptoms in colonic carcinoma. In the absence of diarrhea, the noting of red blood in or on the stools should suggest a lesion distal to the hepatic flexure. If due to tumor, the site is ordinarily in the rectum or sigmoid. In association with diarrhea, the appearance of bright-red blood in the stools, and particularly with pus and mucus, is more commonly the result of inflammation than of neoplasm.

In this series, gross blood appeared in the stools in 233 cases, so that bleeding was a presenting complaint in 56 per cent of cases. The character of the bleeding in relation to the site of neoplasm is given. It occurred in 80 per cent of neoplasms of the rectum, in 49 per cent of those in the left colon and 30 per cent of those in the right colon. In lesions of the rectum and of the left colon the blood was usually red and noted most often on the outside or intermixed with the stool. In right colonic neoplasms with gross blood, as might be anticipated, it was most commonly described as melena. Of greater importance gross bleeding was a first symptom in 37 per cent of the rectal tumors, in 26 per cent of the tumors of the left colon, but in only 7 per cent of those of the right colon. Furthermore bleeding was the chief complaint in 25 per cent, 21 per cent and 4 per cent of lesions in the rectum, in the left colon and in the right colon respectively. However, it was one of the chief complaints in 53 per cent of the rectal cases and in about one-fourth of the lesions of the left colon and of the right colon.

One of the reasons for delay in arriving at a diagnosis of bleeding carcinoma on the part of

both physician and patient is the great frequency of anal lesions, particularly hemorrhoids. Prior hemorrhoidectomies had been performed for bleeding in 33 of the 220 patients in which red blood was passed in the stools, an incidence of previous hemorrhoidectomy in the presence of bleeding bowel cancer in 15 per cent of cases.

Change in Bowel Habit — According to many observers this is perhaps the most important early symptom, particularly in cancer of the left colon (Cattell et al.; Shallow et al.). The details with which this symptom appeared in relation to site of lesion is recorded. It is noted that change in bowel habit was a frequent symptom in lesions throughout the colon in our series. The incidence was significantly greater in the rectal (71 per cent) and in the left colon (69 per cent) neoplasms than in the lesions of the right colon (54 per cent). A further analysis of this symptom will be found in Table XVI. It is seen that change in bowel habit was a first symptom in 42 and in 36 per cent of lesions in the rectum and the left colon respectively compared with 13 per cent in the right colon neoplasms. Furthermore it constitutes the chief complaint in 32 and in 22 per cent of rectal and of left colon lesions respectively as compared with only 8 per cent of right colon lesions.

Summary of Significance of Three Important Symptoms — In Table XVII one may see at a glance the significance of the three most important symptoms in cancer of the colon and of the rectum in relation to the site of the neoplasm. In lesions of the right colon, pain or discomfort is an outstanding favorite as a first symptom (76 per cent) and as the chief complaint (63 per cent). In neoplasms of the left colon, including the sigmoid, the importance of these three symptoms is more evenly distributed. However, pain or discomfort is considerably in the lead as a *first symptom* (41 per cent of cases); change in bowel habit is a good second as a first symptom (36 per cent of cases) and bleeding as a first symptom occurred quite frequently (26 per cent of cases). In rectal neoplasms, as a first symptom, pain drops to third place (24 per cent of cases). The incidence of the symptoms, "change in bowel habit" (42 per cent) and "bleeding" (37 per cent) as first symptoms are both very high.

Finally, in this analysis of the three important clinical symptoms, it will be seen that all three have a very high incidence. From that stand-

point alone, the most frequent symptom in rectal lesions is bleeding (80 per cent of cases), that of left colon lesions is pain (83 per cent of cases), and that of right colon lesions is also pain (89 per cent of cases). In summarizing their incidence in the entire series of neoplasms of colon and of rectum regardless of site, it is noted that each one of these three symptoms was present in more than 50 per cent of cases. The frequency incidence of occurrence was pain (78 per cent), change in bowel habit (67 per cent) and bleeding (56 per cent).

Other First Symptoms — There are other clinical manifestations of colonic carcinoma which may at times be the first to attract the attention of the patient. These usually cannot be looked upon as symptoms of early carcinoma, but rather as the first presenting symptoms of moderately advanced disease.

Bowel Obstruction — Bowel obstruction as a presenting symptom in relation to the site of neoplasm is analyzed. Lesions of the left colon are more commonly responsible for obstruction. This accounted for the presenting complaint in 16 per cent of the left colon lesions and in 11 per cent of the entire series of cases of cancer of the colon and rectum.

Anemia — Anemia sufficient to give rise to major symptoms was present in 102 cases. The most important of these was fatigue listed in 102 or 24 per cent of cases. Anemia was more frequent in lesions of the right colon (53 per cent), where symptoms attributed to anemia constitutes the first symptom in 10 per cent and the major complaint in 27 per cent of cases.

Weight Loss — The incidence of weight loss of over 10 pounds is given. In 38 per cent of the 418 cases, weight loss of this magnitude was recorded. The incidence in neoplasms of the right colon was highest (50 per cent). This high incidence of weight loss surely indicates that many of the lesions were moderately advanced when the diagnosis was established.

Symptoms the Result of Metastasis — It was not possible to be sure how often symptoms due to metastasis were first symptoms. We list those instances of metastasis giving rise to symptoms. This occurred in 30 instances or 7 per cent. Metastasis occurred to the liver in 23 cases, to the bone in five instances and to the lung in two others.

Palpable Mass — A palpable mass at the time

of first hospital examination was recorded in 104 of 179 instances of colonic carcinoma, or 37 per cent of cases. It is significant that a palpable mass was noted in 69 per cent of right colon neoplasms as compared with 29 per cent of left colon lesions. The high incidence of palpable masses supplies still further evidence that the diagnosis was not established until the lesions were far advanced in many instances. The incidence of a palpable mass in our cases corresponds quite closely to the percentages reported by Muir of London.

Summary

Four hundred and eighteen case records of carcinoma of the colon and of the rectum are reviewed. The distribution of cases was rectum, 139 cases (33 per cent), left colon, 209 cases (50 per cent) and right colon, 70 cases (17 per cent).

The incidence of antecedent or precursor lesions is given (9.8 per cent). These comprise single polyp (4.8 per cent), multiple polyposis (1.4 per cent), ulcerative colitis (0.9 per cent), and previous colonic carcinoma (2.6 per cent).

Delay in diagnosis has been computed. A delay of over six months was attributed to patients in 23 per cent and to physicians in 28 per cent of cases. The average-time delay was practically the same regardless of location of the neoplasm. The overall-time delay in diagnosis was less in the group of patients seen after 1951 as compared with those seen between 1936 and 1950. Prior surgery had been erroneously performed for relief of pain due to carcinoma in 4.7 per cent of patients.

The most common symptom was pain occurring in 65 per cent of rectal, 83 per cent of left colon and 89 per cent of right colon neoplasms. It was the most common first symptom in lesions of the right as well as of the left colon. It was present in 78 per cent of the entire series of 418 cases.

The second most common symptom was change in bowel habit, occurring in 71 per cent of rectal, 69 per cent of left colon and in 54 per cent of right colon neoplasms. It was the most common first symptom in rectal neoplasms. It was present in 67 per cent of the entire series of cases.

A third important symptom was that of passage of gross blood in the stools, occurring in 80 per cent of rectal, 49 per cent of left colon and

30 per cent of right colon lesions. It closely followed "change in bowel habit" as a first symptom in rectal neoplasms (37 per cent) and occurred as a first symptom in 26 per cent of lesions in the left colon (including the sigmoid).

Under the heading of later symptoms or constitutional symptoms is included bowel obstruction, anemia, weight loss, symptoms of metastasis and palpable mass. Any of these manifestations of advanced growth unfortunately may at times constitute the first clinical feature of the disease.

Bowel obstruction, usually a symptom of moderately advanced disease, considered to be the

significant presenting complaint in 16 per cent of colon lesions and in 11 per cent of the entire series of 418 cases.

Anemia, perhaps responsible for symptoms, was noted in 24 per cent of all neoplasms and in 53 per cent of right colon lesions.

Weight loss exceeding 10 pounds was noted in 38 per cent of patients.

Metastasis, responsible for symptoms, was noted in 7 per cent of patients on admission.

Palpable mass was recorded in 37 per cent of colonic carcinomas (excluding rectum). It was present in 29 per cent of left colon lesions and in 69 per cent of right colon neoplasms.

1959 BERTNER FOUNDATION AWARD

DR. RICHARD E. Shope, member and professor at the Rockefeller Institute for Medical Research, New York, was awarded the 1959 Bertner Foundation Award Feb. 27, during the 13th Annual Symposium on Fundamental Cancer Research at the University of Texas M. D. Anderson Hospital and Tumor Institute.

The award is presented annually for outstanding contributions to the field of cancer research. It was established in 1950 in honor of the late Dr. E. W. Bertner, first acting director of M. D. Anderson Hospital and first president of the Texas Medical Center.

Dr. Shope's work gave new impetus to viral research and contributed greatly to proper scientific basis for studies on the part played by viral agents in the origin of neoplastic diseases. He made basic discoveries relating to a number of diseases of infectious and neoplastic character in animals, which laid foundations for observations along similar lines in man. His work on

cancer in rabbits has led to findings of possible great importance for human cancer. He has contributed extensively to knowledge about the spread of many diseases of viral origin in animals. His work contributed to our present-day understanding of the part played by intermediate hosts in the spread of viral diseases. He has done research on numerous animal diseases, including influenza, tuberculosis, cholera, rinderpest and several types of cancer, in swine, cattle, rabbits and deer. His work on rinderpest led to an effective vaccine against this disease.

Dr. Shope's studies on the transmission of swine influenza virus are a classic example of experimental work on transmission of viral diseases. His observations of leeches as a virus reservoir are important in our understanding of the natural spread of some viruses. He has conducted experiments on transmission of viral diseases from animals to humans and humans to animals.

HOSPITAL USE

WHY DO MORE than 20 million Americans — or one out of every eight — enter a hospital each year?

This is the subject of a \$200,000 study authorized by the executive committee of Health Information Foundation. It will be conducted jointly by the National Opinion Research Center of the University of Chicago, and the Foundation.

A sample of admissions to hospitals in Massachusetts will be examined through the approval and co-operation of the Massachusetts Medi-

cal Society, the Massachusetts Hospital Association, and the Blue Cross-Blue Shield plans in that state. The 2½-year study will attempt to ascertain the non-medical factors and family situations which lead to hospital utilization as well as medical reasons given by physicians.

According to George Bugbee, Foundation president, admissions to hospitals are governed not only by medical diagnosis, but by concepts of patient comfort, optimum conditions for treatment, and by many personal and social factors.

"These same factors may also affect the pa-

tient's length of stay in the hospital," he said, "and it is important to study them if we are to establish a reasonable definition of the role of the hospital."

Such a definition is essential, he explained, because it governs interpretations of use or possible "overuse" of health insurance benefits. "There have been allegations in recent years that there is 'abuse' or 'overuse' of hospitalization insurance," he said, "and that such 'overuse' adds substantially to the cost of care. We hope that the new study will bring greater insight to concepts of what constitutes adequate use of our hospitals."

Mr. Bugbee said the survey is one of a group of major studies of voluntary health insurance sponsored by the Foundation. The Foundation was organized in 1950 as a contribution by the drug, pharmaceutical, chemical and allied industries to research and education in the social and economic aspects of medical care.

In pointing to the need for the new study, the Foundation cited several recent conclusions of Ray E. Brown, superintendent of the University of Chicago Clinics. In an article published in *Hospitals*, the Journal of the American Hospital Association, Mr. Brown said that there are forces — cultural and economic as well as medical — that affect how many people are admitted to hospitals, but are beyond the hospitals' control. Among them, for example, are some changing characteristics of the American population:

Experts say that by 1975 there will be an additional 8 million people over 65 — a group with higher-than-average medical care needs whose hospital costs are estimated to be from three to four times greater than for those under age 65.

The dependent child population, those under 18, is expected to increase some 20 million or about 35 per cent by 1975. This means that the number of dependents covered under pre-payment family certificates (for hospitalization and other services) will increase faster than the total number of certificates.

Concepts of illness are changing: an increase in the number of working wives, for example, means less care for the sick at home and more use of hospitals even for the less serious illnesses.

The public is becoming increasingly aware of the value of hospital care and such care is "becoming an accepted component in the average American's standard of living."

Such factors, according to the Foundation,

mean that many non-medical considerations are increasingly important influences on admissions to hospitals, and consequently, on the cost of care.

"The degree to which individual judgment is involved is one of the objectives of our study," Bugbee said. Among others he included the individual's attitude toward hospitalization, his home and job situations, his ability to meet costs, and his doctor's habits, beliefs and experiences.

"We need to know much more about what the public expects of hospital service," Bugbee said. "Our study, however, will not attempt to evaluate current use of such service, but rather will describe it and thus be of value to those concerned with defining what may be considered justifiable and legitimate use of hospital care."

"Before limitations are imposed on money being spent for hospital care or the number of people being admitted to hospitals, it is important that we have full information on why hospitals are now being used so much more widely," he said. "That is the purpose of our study."

"Overuse of services would be wasteful," Bugbee said. "On the other hand, undue limitations could stand in the way of needed medical care or could delay progress."



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HOW HOSPITALS ARE USED TODAY

THE last two decades have witnessed major changes in the patterns of hospital utilization. Almost two-thirds of the population now have some protection against hospital costs through Blue Cross plans or private insurance contracts. In 1940, fewer than 10 per cent had such protection. During the same period, the admission rate to general hospitals has more than doubled. Coincidentally, with the development of more effective medicines and the trend toward early ambulation, there has been a sharp reduction in the average length of hospital stay.

But in spite of a shorter average length of stay, both the cost per patient and the cost per day have approximately doubled in little more than 10 years. As a result of these sharply rising hospital costs, and of the steadily mounting admission rate, hospital insurance has had no recourse but to raise subscriber premiums. There is thus presently much concern that voluntary health insurance must soon "price itself out of the market."

Allegations have been made that "overuse" or "abuse" of hospital insurance by both patients and doctors has in itself contributed substantially to the rising costs which now so bedevil the insurance plans. It is argued that many patients who do not really require hospitalization are nevertheless placed in hospitals, or their stay is extended, purely for their own convenience or that of the doctor, because the hospital charges are covered by insurance. It is said that doctors often hospitalize insured patients for diagnostic tests which could be performed just as well outside of a hospital, but the truth is that facts are not known.

In consequence, a number of research efforts have been and are being made to ascertain the degree of overuse of hospital facilities. In one study, a sample of hospital case records was transcribed and presented to a panel of eminent physicians for evaluation. Another research team is collecting pairs of cases hospitalized by the same physician for the same condition, but who differ substantially in the length of their hospital stay — and is then asking the doctor to account for the difference. Perhaps the most ambitious attempt is currently getting under way in Michigan, where medical criteria for hospital

admission and discharge for selected major diagnoses have been agreed upon by panels of physician-specialists. It is next planned to sample hospital records to ascertain the proportion of admissions and discharges which failed to meet these criteria, and then to interview the physicians concerned with these deviant cases in an effort to understand the factors.

What Is 'Overuse'?

But aside from such problems as size and representativeness of the samples, the competence of small panels of doctors to speak for the total medical profession and the difficulty of judging otherwise unknown cases solely from clinical records, the value of all of these approaches is sharply limited by a lack of consensus as to just what constitutes "overuse" of hospital facilities. Even if it were found that large numbers of hospitalizations fail to meet the medical criteria, and that the attending physicians were often guided by non-medical considerations, the question remains: Is this a proper or improper use of hospital facilities?

It is generally conceded that the overwhelmingly majority of hospital admissions are required for legitimate medical reasons, and it is equally conceded that there will inevitably be occasional instances of flagrant abuse of insurance. But between these extremes, there is a large area in which individual judgment must necessarily play a part. In deciding whether or not to hospitalize a patient at a particular time, the physician's decision will very often be affected not only by the medical circumstances of the case, but also by a host of personal and social factors. Among these are the doctor's own habits, beliefs, experiences and predispositions; the quality and accessibility of hospital facilities or of alternative facilities outside the hospital; the patient's own attitudes toward hospitalization, his home and job situation, his ability to meet hospital costs, etc. The same non-medical factors will also, in many cases, affect or even determine the patient's length of stay and the date of his discharge.

The extent to which hospitals are considered to be "overused" or insurance benefits to be "abused" ultimately depends, therefore, upon one's definition of the *role and function of the hospital*. If, at one extreme, the hospital is re-

garded as a "life-saving" institution, to be employed only when other alternatives have failed, one is likely to find today a great deal of "overuse." If, on the other hand, the hospital is regarded as a community facility to be utilized whenever its services can help provide better medical care than could be obtained outside, the amount of "overuse" one finds is likely to decline very sharply.

Before there can be any meaningful measure of the amount of "overuse" of hospitals, much better and fuller information is required concerning the ways in which hospitals are actually used today and the needs which they serve. It is evident that, for a variety of reasons, the hospital today plays a different role from the one it played 20 years ago. Public attitudes toward hospitalization have changed; physicians' attitudes and practices with respect to hospitalization have similarly undergone changes; and hospitals themselves are in constant evolution. At present, we know very little about the extent to which non-medical considerations actually affect hospital admission and discharge. What is needed is to examine a representative group of hospital cases, and to *reconstruct the chain of events and decisions which led to their admission and discharge*. Such an approach requires interviews not only with the attending physicians, but also with patients themselves.

Such a study would be primarily *descriptive* rather than *evaluative*. It would aim to supply the insistent need for information on the present role and function of the hospital and for systematic data on the factors affecting hospitalization decisions. It would not attempt to define the amount of "overuse" nor to set standards for hospital utilization. But the facts it discloses should improve and sharpen present concepts of what a hospital is for.

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VOLUNTARY HEALTH INSURANCE AMONG THE AGED

AT THE PRESENT time, there are about 15 million people 65 years old or over in this country. The aged now constitute 8.6 per cent of the total population and by 1980 the figure will be about 10 per cent.

In 1957, about three out of every eight persons aged 65 or over in this country, had some form of voluntary health insurance. There are many others in this group who would like to have some form of insurance. The average insured person in this group had obtained his insurance over 10 years before, usually through his employment. The majority, 56 per cent, first obtained their insurance through a place of employment. The rest obtained it some other way such as when a salesman called, through friends or relatives, or through advertising, direct mail and other means.

The cost of this insurance as paid by this group ranged from less than \$1 per month to \$20 or more per month. The average was \$4 per month. Less than 3 per cent of the total aged in this survey had tried to get insurance and been turned down.

Nearly two-thirds of the population aged 65 and over stated that they would like to have insurance covering all medical expenses. Others would like partial coverage, and 17 per cent were unwilling to pay anything for it. The majority, 54 per cent, were in favor of government insurance, while 43 per cent were against it; of those favoring government insurance, 80 per cent define these people in terms of economic need and even added some other qualifications.

Providing the aged with health insurance has become a major medical problem. Recently the American Medical Association has adopted a proposal under which doctors would treat aged persons with low incomes at reduced fees. Plans for financing the health needs of the aged may vary, but all should agree on one point: That a group of older persons responsible for their own health is an asset to society — and in keeping with our present attitudes toward independent active later life for all.

DONALD N. McLEOD, M.D.

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GILA BEND — Population 2,500 — 80 miles west of Phoenix — nearest town to the Painted Rock Dam project — good opportunity for GP. Cattle, cotton, and general farming. Office and equipment available. \$150 monthly income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Ariz.

HAYDEN — Population 3,000/4,000 — industrial practice — approximately 200 employees and dependents. Only part-time required. Coverage: Metropolitan Surgical Plan. Physician may engage in private practice also. Small company-owned clinical building (new) available for use, with X-ray equipment, diathermy equipment, etc. Full-time nurse available to assist; clerical work to be handled by company. Company housing facilities available for physician — small rental. Contact: American Smelting & Refining Company, Mr. Ben Roberts, department manager, P.O. Box 1111, El Paso, Texas.

MIAMI — Opportunity for GP — industrial hospital staffed by approximately seven doctors, who care for personnel and families of those who work for the three principal mining companies. Community served by many mining and ranching interests. Contact Robert V. Horan, M.D., Miami Inspiration Hospital, Miami, Ariz.

MORENCI — Mining community near New Mexico-Arizona border. Population 10,000. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Ariz.

PAGE — Population growing by leaps and bounds at the site of the new Glen Canyon Dam project. Current estimates are 6,000 to 8,000 total. Only one M.D. is now located in Page and he has facility available. Located about 90 miles north of Flagstaff, Ariz., the building project is estimated to be concluded in 10 years. Write Ivan W. Kazan, M.D., 6th Ave. & S. Navajo, Page, Ariz., for full details.

SAFFORD — Graham County Health Department in need of an M.D. In the heart of the cattle and farming areas of southeastern Arizona.

Population of 10,500 and elevation is 2,920. Schools, churches and social facilities are numerous. Contact Mr. Verl Lines, chairman, Graham County Board of Supervisors, Safford, or Frederick W. Knight, M.D., 618 Central Ave., Safford.

ST. JOHNS — Seriously need a doctor of medicine, preferably a GP, in this east-central Arizona community. Population is approximately 1,500 with several other small towns in the general area. About 20 miles from New Mexico in the beautiful rim country of Arizona. Contact Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz.

TOLLESON — In need of GP. Serves a trading population of from 12,000 to 15,000. Ten miles west of Phoenix, with elementary and high schools, churches of all denominations. Complete office and equipment for GP is available on reasonable term lease or purchase. Contact Mr. F. E. Babcock, president, chamber of commerce. 9112 West Van Buren St., Tolleson, Ariz.

TUCSON — The VA Hospital is in urgent need of an orthopedic surgeon. They prefer someone who is board certified, but would take someone who has had special training as they have the local men in this field available for consultation service. State license is necessary (but not necessarily an Arizona license). Contact S. Netzer, M.D., director, professional service, VA Hospital, Tucson, Ariz.

WINSLOW — Population over 7,500. Good opportunity for GP. Arrangements can be made to take over existing vacancy in practice. Facilities quite desirable and satisfactory terms can be arranged to suit any financial circumstance. Hospital privileges immediately available. County work also available at \$500 per month plus lab and X-ray. For further details, contact Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz., or Mr. Paul Gear, county supervisor, Court House, Holbrook, Ariz.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Ariz.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Ariz.

Ira E. Harris, M.D., Miami Inspiration Hospital, Miami, Ariz.

Charles B. Huestis, M.D., Box 928, Hayden,

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References:

- Boyd, G. and Oliver, M. F.: "Cholesterol Chemistry, Biochemistry and Pathology." Academic Press, 1958.
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Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Ariz.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Ariz.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Ariz.

Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Ariz.

LOCATION INQUIRIES RECEIVED

HAGGAR, DAVID K., M.D., Hawarden, Iowa; GP; 1943 graduate of the University of Nebraska; interned at Hurley Hospital in Flint, Mich.; served residency at Akron General Hospital in Akron, Ohio; fulfilled military obligations; holds license in states of Iowa, Nebraska, Minnesota and California; married; age 42; interested in clinic, assistant or associate practice. Available June 1, 1959.

KAHN, KENNETH ALLEN, M.D., 2106 Jackson, San Francisco, Calif.; I; 1953 graduate of Colorado Medical School; interned at Receiving Hospital in Detroit, Mich.; served residency at University of Minnesota Hospitals; fulfilled military obligations; holds license in states of Colorado and California; married; interested in clinic, assistant or associate practice; Institutional (part time) available July 1959.

LOOMIS, RICHARD ARTHUR, M.D., 623 Franklin St., Springville, N.Y.; GP; 1943 graduate of the University of Buffalo; interned at Allied Hospitals of the Sisters of Charity in Buffalo, N.Y.; served residency at Buffalo General Hospital; fulfilled military obligations; holds license in New York State; married; age 40; interested in industrial, assistant, associate or institutional practice; available Sept. 1, 1959.

PEARL, ROBERT M., M.D., U. S. Army Hospital, Fort Polk, La.; GP; 1956 graduate of Jefferson Medical College; interned at St. Joseph's Hospital in Philadelphia; will complete military obligation in summer of 1959; holds license in states of Pennsylvania and Texas; single; age 30; interested in clinic, assistant or associate practice. Available August 1959.

REINSSHMIEDT, EDWIN RUBEN, LT. (MC) USNR, Alameda NAS BOQ, Alameda, Calif.; GP; 1956 graduate of the University of Oklahoma; interned at Wesley Hospital in Wichita, Kan.; will complete military obligations July 1, 1959; holds license in the state of Oklahoma; single; age 31; interested in associate practice. Available July 1, 1959.

STONER, HARRY RICHARD, M.D., VA Hospital, Marlin, Texas; GP; GS; 1948 graduate of St. Louis University School of Medicine; interned at Touro Infirmary in New Orleans, La.; served residency at Detroit Receiving Hospital and VA Hospital in Dearborn, Mich.; holds license in states of Missouri and Michigan; fulfilled military obligations; interested in clinic, assistant or associate practice; married; age 35; available immediately.

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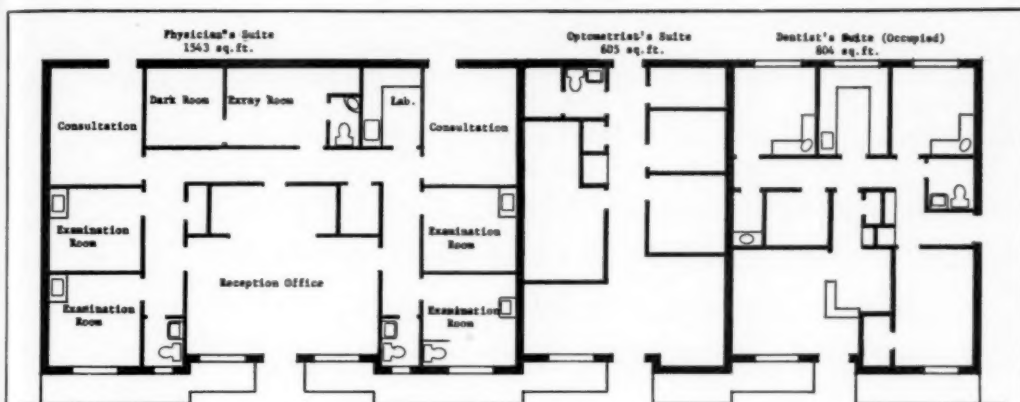
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Future Meetings

Program

THE ARIZONA MEDICAL ASSOCIATION INC.
ANNUAL MEETING — APRIL 28, 29, 30 — MAY 1, 2, 1959
SAN MARCOS, CHANDLER, ARIZONA

Tuesday, April 28

1:00 Council Meeting

Wednesday, April 29

8:00 House of Delegates — Special Session
2:00 Blue Shield — House Meeting
6:30 Reception — Buffet Supper

Thursday, April 30

8:00 House of Delegates — First Regular Session
10:00-10:20 Henry H. Kessler, M.D. — "The Myth of Physical Fitness"
10:20-10:40 Harold D. Jenkins, M.D. — "The Syndromes of Adrenal Cortical Hyperfunction"
10:40-11:00 Thomas L. Royce, M.D. — "Relationship of Eye Findings to General Medical Problems"
11:00-11:20 Intermission
11:20-11:40 Haddon M. Carryer, M.D. — "Treatment of Acute Asthma"
11:40-12:00 Marvin E. Johnson, M.D. — "Esophageal Hiatal Hernia"
12:00-12:30 Johannes M. Nielsen, M.D. — "Migraine"
12:20 Press Conference
12:45 Specialty Luncheon — Arizona Chapter — American College of Surgeons
2:30- 5:30 Medical and Surgical Symposium on "Thyroid Disease" and "Peptic Ulcer"
Panel: John W. Cline, M.D. — Marvin E. Johnson, M.D. — Harold D. Jenkins, M.D. — Roscoe S. Pullen, M.D.
4:00- 4:30 Intermission
5:30 Press Conference
6:30 Reception — Social Hour
7:30 Specialty Dinner — Arizona Chapter — American College of Chest Physicians

Friday, May 1

- 7:30 Featured Breakfast — John W. Cline, M.D. — "Current Trends In Medical Education"
- 9:00- 9:25 Walter L. Hard, Ph.D. — "The Two Year Medical School"
- 9:25- 9:50 John Z. Bowers, M.D. — "The Four Year Medical School"
- 9:50-10:15 Roscoe L. Pullen, M.D. — "Transitional Problems from a Two Year to a Four Medical School"
- 10:15-10:45 Intermission
- 10:45-11:10 Thomas B. Turner, M.D. — "Newer Concept of Medical Education"
- 11:10-11:35 Vernon W. Lippard, M.D. — "The Establishment of a Medical School"
- 11:35-11:50 Marvin E. Johnson, M.D. — "Relationship of the Private Practitioner to a Medical School"
- 11:50-12:05 Thomas L. Royce, M.D. — "Relationship of the Private Practitioner to a Medical School"
- 12:05 Press Conference
- 12:30 Featured Luncheon — Mr. Rueben G. Gustavson (Title to be announced)
- 2:30- 2:50 Fred D. Fagg Jr., Ph.D. — "Regional Co-operation in Medical Education"
- 2:50- 3:45 Medical Education Workshop Symposium — All Guest Orators Participating
- 3:45- 4:15 Intermission
- 5:00- 5:15 John W. Cline, M.D. — "A Summarization of the Day's Activities"
- 5:15 Press Conference
- 6:00 Reception — Social Hour
- 7:45 President's Dinner-Dance

Saturday, May 2

- 8:00 House of Delegates — Second Regular Session
- 9:45-10:00 Intermission
- 10:00-10:20 Johannes M. Nielsen, M.D. — "Whiplash Injury"
- 10:20-10:40 Haddon M. Carryer, M.D. — "The Hyperventilation Syndrome"
- 10:40-11:00 Harold D. Jenkins, M.D. — "Hyperparathyroidism; A Diagnostic Challenge"
- 10:00-11:20 Intermission
- 11:20-11:40 John Z. Bowers, M.D. — "Nuclear Medicine and Its Impact on Future Medical Practice"
- 11:40-12:00 Hubertus Strughold, M.D. — "Space Medicine and Its Impact on Future Medicine"
- 12:00-12:30 To be announced
- 12:00 Press Conference
- 1:00 Annual Handicap Golf Tournament

GUEST SPEAKERS



John Z. Bowers, M.D.

John Z. Bowers, M.D.

Born — August 27, 1913, Catonsville, Maryland.

B.S., Gettysburg College, 1933; M.D., University of Maryland School of Medicine and College of Physicians and Surgeons, 1938; Active Duty, U. S. Naval Reserve, Medical Corps, 1941-45. Citations, Purple Heart, Legion of Merit (for combat). Chief of Medical Branch and Deputy Director, Division of Biology and Medicine, U. S. Atomic Energy Commission, 1957-50; Dean, University of Utah College of Medicine, 1950-55; Dean and Professor of Medicine, University of Wisconsin Medical School, 1955 to date.



Haddon M. Carryer, M.D.

Haddon M. Carryer, M.D.

M.D., Northwestern University Medical School; Ph.D., University of Minnesota; Fellow, American College of Physicians and American Academy of Allergy; Assistant Professor of Medicine, Mayo Foundation (part of the graduate school of the University of Minnesota); Consultant, Division of Medicine at the Mayo Clinic.



John W. Cline, M.D.

John W. Cline, M.D.

A.B., University of California, 1921; M.D., Harvard, 1925; Surgical House Officer, Massachusetts General Hospital, 1925-1927; Resident Surgeon, Bellevue Hospital, New York, 1927-1929; Member, San Francisco County Medical Society (President, 1942); Member, California Medical Association (President, 1947-1948); Member, Cancer Commission, California Medical Association; Member, American Medical Association (Member of House of Delegates (1945-1950) (Delegate to World Medical Association, 1948 and 1949); President, American Medical Association, 1951-1952; Member, Council on Medical Education and Hospitals, A.M.A.; Member, San Francisco Surgical Society (President, 1947); Member, California Academy of Medicine; Member, Pacific Coast Surgical Association; Fellow, American College of Surgeons; Director, California Division, American Cancer Society; Secretary, California Division, American Cancer Society (1949-1951).

Associate Clinical Professor of Surgery, Stanford University School of Medicine; Surgeon to Stanford, San Francisco and Children's Hospital; Member of the Board of Trustees of Saint Francis Memorial Hospital; Surgical Consultant, Biggs-

Gridley Memorial Hospital; Expert Medical Consultant in Surgery to the United States Air Force, 1950-1954; Consultant to Surgeon General, United States Navy, 1951-1954; Author, Papers on Surgical Subjects and Medical Economics; Member, Board of Governors, Commonwealth Club of California, 1951-1956; Chairman, Cancer Commission, California Medical Association, 1955-56-57; Vice President, American Cancer Society, California Division, 1956; Chairman, California Division; Member, Board of Directors, Board of Directors of American Cancer Society, American Cancer Society, Inc.; Chairman, Medical and Scientific Committee, American Cancer Society, 1958-1959.



Fred Dow Fagg, Jr., Ph.D.

Fred Dow Fagg Jr., Ph.D.

A.B., University of Redlands; A.M., Harvard, 1921; J.D., Northwestern, 1927; Harvard faculty, 1922-24; Northwestern faculty, 1924-27; Northwestern faculty, Law School, 1929-39; Vice President, Northwestern, 1939-47; President, U.S.C., 1947-57.

Walter L. Hard, Ph.D.

Walter L. Hard, Ph.D., Dean, School of Medicine, State University of South Dakota, and Professor and Chairman of the Department of Anatomy.

Born in Michigan, completed his undergraduate education at Albion, Michigan, in 1934 and received his Ph.D. Degree from Duke University in 1937. He was married in 1938 to Harriette Pollard of Washington, D.C. and they have two boys, Frank, eleven years of age, and Walter, nine years old.

Dr. Hard served as Instructor and Assistant Professor in Anatomy at the University of Maryland from 1938-1944 and as Associate Professor in Anatomy Medical College of South Carolina from 1944-1946. He joined the staff at the Uni-



Walter L. Hard, Ph.D.

versity of South Dakota as Professor and Chairman of Department of Anatomy in 1946 and became Dean in 1952.

Dr. Hard is the author of some forty publications in scientific and educational journals and is particularly interested in the field of microanatomy and histochemistry. He is a member of Sigma Xi, American Association of Anatomists, Society of Experimental Biology in Medicine, Sioux Valley Medical Society, and is an associate staff member of Sacred Heart Hospital in Yankton, South Dakota. He is also a member of the Basic Science Board of Medical Examiners for South Dakota.



Harold Dalton Jenkins, M.D.

Harold Dalton Jenkins, M.D.

M.D., University of Colorado, 1943; Internship, University of Wisconsin, 1943-44; Residency, University of Colorado, 1944-49; Research Fellowship, Peter Bent Brigham Hospital, 1950-52; Instructor in Medicine, Harvard, 1952-53; Head of Section in Endocrinology and Assistant Professor of Medicine, University of Colorado, 1953; Associate Attending Physician, Colorado General and Denver General Hospitals, 1953; Consultant in Endocrinology, Fitzsimons General Hospital; V. A. Hospitals, Denver and Albuquerque, New Mexico; Colorado State Hospital, 1953.

**Marvin E. Johnson, M.D.****Marvin E. Johnson, M.D.**

Graduate of University of Iowa College of Medicine, 1943; Served in the Medical Corps of AUS, 1943-46; Diplomate of the National Board of Medical Examiners; Diplomate of American Board of Surgery; Member of the Central Surgical Association; Assistant Clinical Professor of Surgery, University of Colorado School of Medicine; Surgical Consultant, Denver VA Hospital; President, Staff of St. Joseph's Hospital, Denver.

Reuben Gilbert Gustavson, Ph.D.

Reuben Gilbert Gustavson, Ph.D., President, Executive Director, Resources for the Future, Inc., Washington, D. C. (1953-).

**Reuben G. Gustavson, Ph.D.**

Born — Denver, Colorado, April 6, 1892.

A.B., University of Denver, 1916, A.M., 1917; Ph.D., University of Chicago, 1925; honorary degrees from 13 universities and colleges. Member chemistry faculty, Colorado Agricultural College, 1917-1920; member chemistry faculty University of Denver, 1920-1937; professor of chemistry, dean of Graduate School and president University of Colorado, 1937-1944; vice president and dean of faculties University of Chicago, 1945-1946; chancellor University of Nebraska 1946-1953.

Formerly member: Board of Governors Argonne National Laboratories; member U. S. Commission for UNESCO, official United States delegate to UNESCO Conference, Mexico City, 1948; delegate to the Geneva Conference on Peaceful Uses of Atomic Energy; member U. S. scientific exchange team to USSR, 1958, member Research Advisory Council U. S. Public Health Service; member Research Advisory Council of National Foundation for Infantile Paralysis.

Presently member: Research Advisory Council, American Cancer Society; chairman, Committee on Weather Modification, National Science Foundation; foreign member Swedish Academy of Science.

Decorated Knight Order of North Star (Sweden); Fellow Chicago Gynecology Society (Hon.); Norlin Medal for Distinguished Service, University of Colorado, 1944; Civic Princeps Award, Regis College, 1948. Phi Beta Kappa, Sigma Xi, Phi Sigma, Phi Lambda Upsilon, Tau Beta Pi.



Vernon, W. Lippard, M.D.

Vernon William Lippard, M.D.

Born Marlboro, Mass. October 4, 1905; Son of William Charles and Lucy Maria (Balcom); B.S., Yale, 1926; M.D., *cum laude*, 1929; Sc.D. (honorary), University of Maryland, 1955; married Margaret Isham Cross August 29, 1931; one daughter Lucy Rowland.

Intern, New Haven Hospital, 1929-30; Assistant and Resident Pediatrician, New York Nursery and Children's Hospital, 1930-32; Resident Pediatrician New York Hospital, 1932-33; Instructor in Pediatrics, Cornell University Medical College, 1933-37; Associate in Pediatrics, 1937-38; Director of Study Comm. for Study of Crippled Children, New York City, 1938-39; Associate Dean College of Physicians and Surgeons, Columbia University, 1939-46; Dean and Professor of Pediatrics, School of Medicine, Louisiana State University, 1946-49; Dean and Professor of Pediatrics, University of Virginia, 1949-53; Dean and Professor of Pediatrics, Yale University School of Medicine, 1953 to the present.

Member of Board of Medical Consultants, Oak Ridge Inst. Nuclear Studies, 1948-52; Brookhaven National Laboratories, 1957; served as Lt. Col. and Col. Medical Corps, U. S. Army 1942-45; 27 months active duty overseas in Australia, New Guinea, Netherlands East Indies and P. I. Certified American Board of Pediatrics; President of the Association of American Medical Colleges, 1934-55; Member of the Society for Pediatric Research, Association of American Physicians; the American Medical Association, Sigma Xi, Alpha Omega Alpha; Consultant to the Italian Government 1949, State of Florida 1948, State of New Jersey 1952, on

development of programs of medical education. Episcopalian. Author: "The Crippled Child in New York City" 1940; contr. numerous articles chiefly on the immunology in childhood and medical education to medical journals.

Address: Dean, School of Medicine, Yale University.



J. M. Nielsen, M.D.

J. M. Nielsen, M.D.

Teaching Neurology and Psychiatry, University of Southern California (twenty-two years). Presently teaching Neurology at UCLA.



Roscoe L. Pullen, M.D.

Roscoe L. Pullen, M.D.

Born January 6, 1915, Princeville, Illinois. Bachelor of Arts degree, Knox College, Galesburg, Illinois, 1935; Bachelor of Medicine degree, Northwestern University Medical School, 1939; Doctor of Medicine, Northwestern University Medical School, 1940; Internship, Charity Hospital of Louisiana, New Orleans, 1939-40; Fellow in Endocrinology, Duke University School of Medicine and Hospital, Durham, N.C., 1940-41; Resident in Internal Medicine, Tulane University Unit, Charity Hospital of Louisiana, New Orleans, 1941-44; Assistant Director in Charge of All Medical Services, Charity Hospital of Louisiana, New Orleans, 1943-46; Associate Professor of Medicine and Director of Hospital Planning, University of Washington School of Medicine, Seattle, 1946-49; Medical Director of King County Hospital System, Seattle, Washington, 1947-49; Professor of Graduate Medicine, Director of the Division of Graduate Medicine, and Vice-Dean, Tulane University School of Medicine, 1949-52; Professor of Medicine and Dean of the University of Texas Postgraduate School of Medicine, Houston, Texas; Professor of Clinical Medicine, Baylor University College of Medicine, Houston, Texas, 1952-53; Professor of Medicine and Dean of the University of Missouri School of Medicine, 1953 to date.

Consultant to several Veterans Administration Hospitals in Louisiana and Mississippi. Author of approximately 60 scientific papers and medical literature and four books. Chief fields of interest: Medical Education, Infectious Diseases, Physical Diagnosis and Diseases of the Chest. Consultant to the Surgeon General, Department of the Army, Washington, D. C., since 1947.

**Thomas L. Royce, M.D.****Thomas L. Royce, M.D.**

B.A., B.S., University of Mississippi; M.D., Tulane University; Clinical Associate Professor of Ophthalmology of Texas Postgraduate School of Medicine; Clinical Assistant Professor of Ophthalmology of Baylor College of Medicine; Ophthalmologist-in-Chief at Hermann Hospital, Houston; Member of Executive Board of Harris County Medical Society; Member of Public Relations Committee of Texas Medical Association.

**Marcy L. Sussman, M.D.****Marcy L. Sussman, M.D.**

M.D., Cornell University, New York; Former Radiologist, Mount Siani Hospital, New York City; Former Clinical Professor of Radiology, College of Physicians and Surgeons, Columbia University, New York, N. Y.; Clinical Professor of Radiology, University of Southern California.

Radiologist: Southside District Hospital, Mesa; St. Luke's Hospital, Phoenix; Area Consultant in Radiology, Veteran's Administration.

Ashton B. Taylor, M.D.

Birthdate: October 4, 1919. Birthplace: Chicago, Illinois.

Degrees: B.S., Northwestern University, 1942; B.M., Northwestern University, 1944; M.D., Northwestern University, 1945; M.S. in Medicine, University of Minnesota, 1950.

Positions: Consultant in Medicine, Mayo Clinic, Rochester, Minnesota, June 1950 to January 1952; Active staff, St. Joseph's Hospital, Phoenix, January 1952 to present; Associate staff, Good Samaritan Hospital and Memorial Hospital, Phoenix, January 1952 to present; Courtesy staff, St. Luke's Hospital and John C. Lincoln, Phoenix, January 1956 to present.



Ashton B. Taylor, M.D.

Certification: American Board of Internal Medicine, 1951; American Board of Gastro-Enterology, 1953.

Societies: AOA, Sigma Xi, American College of Physicians, American Diabetes Association, American Gastro-enterological Association, American Medical Association, Arizona Medical Association, Maricopa County Medical Society, Arizona Society of Internal Medicine.



Thomas B. Turner, M.D.

Thomas Bourne Turner, M.D.

Born January 28, 1902 in Prince Frederick, Maryland. Married Anne Parran Somervell, October 22, 1927; two children.

Education: St. John's College, Annapolis, B.S.,

1921; University of Maryland Medical School, M.D., 1925; Intern, Hospital for Women of Maryland, 1925-26; Resident in Medicine, Mercy Hospital, 1926-27; Jacques Loeb Fellow in Medicine, Johns Hopkins Medical School, 1927-28.

Professional and Academic Appointments: Instructor in Medicine, Johns Hopkins Medical School, 1928-31; Associate in Medicine, Johns Hopkins Medical School, 1931-32; Lecturer in Public Health Administration, Johns Hopkins School of Hygiene and Public Health, 1930-32; Staff member, International Health Division of the Rockefeller Foundation, 1932; Clinical director, Jamaica Yaws Commission, 1932-34; assigned to laboratories of the International Health Division at the Rockefeller Institute, 1934-36; Lecturer in Medicine, Johns Hopkins School of Medicine, 1936; Lecturer in Public Health Administration, Johns Hopkins School of Hygiene and Public Health, 1936; Professor of Microbiology, The Johns Hopkins University, 1939-present. Dean of the Medical Faculty, Johns Hopkins Medical School, 1957-present.

Membership in Societies, etc.: Association of American Physicians; Fellow, American Public Health Association; American Social Hygiene Association; American Society for Clinical Investigation; Society of American Bacteriologists; American Venereal Disease Association (past president); Harvey Society; Medical and Surgical Faculty of Maryland; American Medical Association; Editorial Board, American Journal of Hygiene; Member, Board of Visitors and Governors, St. John's College; Member, National Advisory Council on Health Research Facilities, National Institutes of Health; Consultant to The Surgeon General, U. S. Army; Consultant to Baltimore City Health Department; Vice Chairman, Committee on Virus Research and Epidemiology, National Foundation for Infantile Paralysis, 1949; Chairman, Fellowship Comm., National Foundation for Infantile Paralysis. Active duty, U. S. Army, 1942-46, Lt. Col. through Col. — Awarded Legion of Merit.

Clarence Loveridge Robbins, M.D.

Home Address: 4025 East Burns Street, Tucson, Arizona. Office Address: 1608 N. Norton Ave., Tucson, Arizona.

Born August 22, 1903, New Haven, Conn.

B.A., Yale, 1925; M.D., Yale, 1929; Intern, Medical and Pathology, New Haven Hospital, 1929-1930; Associate Resident Physician, Desert Sanatorium, Tucson, Arizona, 1930-1931; Associate Resident, Medicine, University of California Hospital, San Francisco, California, 1931-1932; Sex Research Fellow, Yale School Medicine, 1932-1934; Instructor Medicine, Yale School Medicine, 1934-1937; Assistant Clinical Professor Medicine, Yale School Medicine, 1937-1947; Military Service, Overseas in P.O.A., 39th General Hospital, 1942-1946, Major to Lt. Col.; Resumed duties as Assistant Clinical Professor Medicine, Yale



Clarence L. Robbins, M.D.

School of Medicine, Assistant Physician, Yale University Department of Health, and Assistant Attending Physician, New Haven Hospital, 1946-1947; Moved residence to Tucson, Arizona, and began private practice in partnership with Dr. Benson Bloom, January 1, 1947.

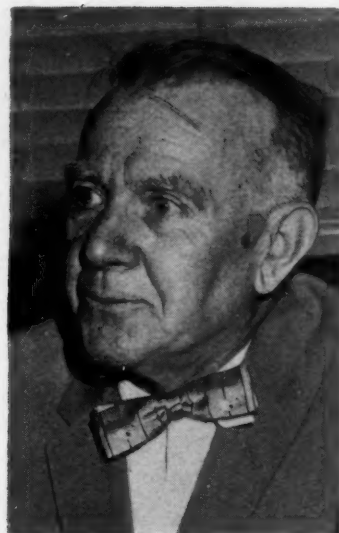
Present Hospital Affiliations: Active Staff Member, Tucson Medical Center — Chief of Staff, 1954 and 1955; Active Staff Member, Pima County Hospital; Courtesy Staff Member, St. Mary's Hospital.

Societies: A.O.A., Sigma Psi, A.M.A. and Constituent State & County Societies (Vice President Pima County Medical Society, 1958-1959), American Rheumatism Association, American Heart Association (President Arizona Heart Ass'n., 1952), The Endocrine Society, American Diabetes Association.

Hubertus Strughold, M.D.

Dr. Strughold was born June 15, 1898, in Westtuennen, Westfalia, Germany. He studied medicine and natural sciences at the Universities of Muenster, Goettingen, Munich and Wuerzburg. He received his Ph.D degree from the University of Muenster in 1922 and his M.D. degree from the University of Wuerzburg in 1923.

Dr. Strughold was research assistant to Professor Max von Frey at the Physiological Institute in Wuerzburg until 1927. Specializing early in aviation medicine, he gave the first lectures in this field in the summer semester, 1927, at Wuerzburg. In 1928-29 he visited the United States as a Fellow of the Rockefeller Foundation to perform research at Western Reserve University in Cleveland under Professor Carl Wiggers, and at the University of Chicago un-



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der Professor A. Carlson. In 1929 Dr. Strughold was again research assistant and lecturer in physiology and aviation medicine at the University of Wuerzburg, until 1935 when he became director of the Aeromedical Research Institute in Berlin and associate professor of physiology at the University of Berlin. After the war he was appointed director of the Physiological Institute of the University of Heidelberg in 1946. In 1947 he joined the staff of the School of Aviation Medicine of the United States Air Force. In 1949 Dr. Strughold was appointed chief of the newly founded Department of Space Medicine at the School. In 1951 he received the academic title of Professor of Aviation Medicine from the Air University.

On 20 July 1956 Dr. Strughold became a citizen of the United States.

He is a member of medical and scientific organizations, both national and international, as follows: German Physiological Society; American Physiological Society; Kaiserlich-Leopoldinische Carolinische Deutsche Akademie der Naturwissenschaften, Germany; Akademia der Wissenschaften of the University of Heidelberg; a charter member of the Space Medicine Association; an honorary member of the Aeromedical Association; member of the American Rocket Society; German Gesellschaft fur Weltraumforschung; the International Astronautical Federation; the International Mars Committee; the American Rocket Society Space Flight Technical Committee, and is a life member of the Sociedade Interplanetaria Brasileira as a space physician and biologist.

In 1945 Dr. Strughold, in the German Air Force Medical Corps, was promoted to colonel and received the German War Merit Cross, Class

2 and 1. He also received the Medal Royal St. Sava Order IV Class, and the Order of the Yugoslavian Crown from the Government of Yugoslavia (1937), the Order of King Vasa from the Government of Sweden (1924), and the Middle Cross of the Holy Hungarian Crown from the Government of Hungary in 1943. For his pioneer research in space medicine, Dr. Strughold was awarded the Herman Oberth Medal of the German Rocket Society at the annual meeting of the International Astronautical Association Congress, at Innsbruck, Austria, in August, 1954. In February, 1958, at the Jet Age Conference of the Air Force Association in Washington, D. C., Dr. Strughold received the Exceptional Civilian Service Award from Secretary of the Air Force James H. Douglas, Jr., for pioneer research in space medicine from 1948 to 1958. In March, 1958, the doctor was presented with the Theodore C. Lyster Award of the Aero Medical Association, for his work in space medicine and allied fields, and that same month the Air University Command named Dr. Strughold the first

Professor of Space Medicine. On January 27, 1959, Dr. Strughold was awarded the 1958 Dr. John J. Jeffries Award for his contributions in space and aviation medicine research.

Dr. Strughold is author of the book, *The Green and Red Planet; A Physiological Study of the Possibility of Life on Mars*, and 130 professional papers on physiology, aviation medicine and space medicine. He is co-author of a textbook, *Principles of Aviation Medicine*, and an atlas on aviation medicine.

For the past several years Dr. Strughold has been guest speaker at over 100 meetings of various organizations both military and civilian, such as the American Rocket Society, the Massachusetts Institute of Technology, the Detroit Engineering Society, Air War College, Air Command and Staff College, symposiums on human factors involved in space operations among aircraft, rocket and satellite industries, local and national medical societies, and local and national educational societies. Dr. Strughold has also participated in TV educational films.

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THE STATLER-HILTON HOTEL

THIS conference will afford the 57 speakers from all of Western Europe, Canada, Soviet Russia and the United States an opportunity to present their current work, discuss mutual problems, and enlist suggestions, thereby preventing duplication of efforts.

This entire symposium will be printed as a monograph by Charles C. Thomas, publisher, Springfield, Ill., and will be available to the medical profession early in 1960.

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NEW MEXICO MEDICAL SOCIETY

THE 77th annual meeting of the New Mexico Medical Society will be held in Las Cruces, N. M., May 5-7, 1959.

The theme of the meeting is Space Medicine with the Holloman Air Development Center in charge of the program.

(Continued on Page 348)



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The air base has selected eight of their top flight people, who have devoted their talents to space medicine, to present the program to you. This will be unlike any meeting you have attended.

On the first day of the meeting, May 5, the air force will transport all who have a convention badge, including wives and children, to the Holloman Air Development Center, for a day-long inspection of research laboratories, sled runs, and rocket firing. This will be a tour few

have seen.

There is one *very important* must — *you must register by mail*, in order for you to be cleared. Further, you must ride in buses provided by the air force with a guard. It is necessary for this office to supply the air base with a typed list of pre-registrants by April 15, 1959.

For the clinical program, May 6-7, you may register now or at any time during the meeting.

JAMES C. SEDGWICK, M.D.,
President

CALENDAR OF NATIONAL MEETINGS

Date	Meeting	Place
April		
9-12	American Association for Cancer Research	Haddon Hall, Atlantic City, N.J.
15	ACS Research Committee	New York City
19	American Society of Internal Medicine	Conrad Hilton Hotel, Chicago, Ill.
20-23	American Urological Association	Chalfonte-Haddon Hall, Atlantic City, N.J.
20-24	American College of Physicians	Conrad Hilton Hotel
21-23	American Ass'n. for Thoracic Surgery	Statler Hotel, Los Angeles, Calif.
May		
6-8	American Pediatric Society	The Inn, Buck Hall Falls, Pa.
24-29	National Conference on Social Welfare	San Francisco, Calif.
25-27	American Gynecological Society	The Homestead, Hot Springs, Va.
June		
3-7	American College of Chest Physicians	Atlantic City, N. J.
4-5	American Geriatrics Society	Hotel Traymore, Atlantic City, N. J.
4-6	The Endocrine Society	Chalfonte-Haddon, Atlantic City, N. J.
4-7	American Medical Women's Ass'n.	Sheraton Ritz Carlton, Atlantic City, N. J.
8-12	American Medical Association	Traymore Hotel, Atlantic City, N. J.
July		
4-9	American Society of X-ray Technicians	Shirley Savoy Hotel, Denver, Colo.
22-23	Rocky Mountain Cancer Conference	Brown Palace Hotel, Denver, Colo.
23-30	International Congress of Radiology	Munich, Germany
August		
10-13	National Medical Association	Detroit, Mich.
30 - Sept. 4	World Conference on Medical Education	Palmer House, Chicago, Ill.
September		
6-12	College of American Pathologists	Chicago, Ill.
7-12	World Medical Association	Montreal, Canada
11-12	International Cong. on Air Pollution	New York City
28 - Oct. 2	American Coll. of Surgeons Clinical Cong.	Chicago, Ill.
October		
2-3	American Medical Writers' Ass'n.	St. Louis, Mo.
19-23	American Public Health Ass'n.	Conv. Hall, Atlantic City, N. J.